



July 22, 2005

Rafat Abassi  
Department of Toxic Substances Control  
5796 Corporate Avenue  
Cypress, California 90630

Via E-Mail and U.S. Mail

Re: Revised Technical Memorandum for Indoor Air Quality (IAQ) Sampling Activities at Residences on Third Street and at Norco High School, Norco Intermediate School, and Norco Elementary School in Norco, California  
Wyle Laboratories, 1841 Hillside Avenue, Norco, California

Dear Mr. Abassi:

This revised Technical Memorandum (TM) has been prepared by ENVIRON International Corporation (ENVIRON) on behalf of Wyle Laboratories, Inc. (Wyle) to describe soil gas sampling activities to be conducted at 955 Third Street and soil gas and indoor air quality (IAQ) sampling activities to be conducted at the four residences located at 965, 970, 975, and 998 Third Street, and at three schools (Norco High School, Norco Intermediate School, and Norco Elementary School) in Norco, California. The five residences and the three schools are located in the vicinity of the former Wyle Norco Facility (Site) at 1841 Hillside Avenue in Norco California (Figure 1).

Currently, ENVIRON is in the process of implementing the Department of Toxic Substances Control (DTSC)-approved scope of work described in ENVIRON's *Final Remedial Investigation Work Plan* (RI Work Plan), dated March 18, 2005. The RI Work Plan was prepared to assess and characterize the potential presence of various chemicals in the subsurface beneath the Site, and beneath the areas adjacent to the Site's boundaries. As part of the ongoing investigation, ENVIRON recently completed active soil gas sampling activities at six residences located on Third Street, near the intersection of Third Street and Hillside Avenue (west of Golden West Lane), in Norco, California (see Figure 2). The soil gas results, which are summarized in Table 1, indicated trichloroethene (TCE) concentrations worthy of further assessment in the subsurface in the vicinity of four of the residences, 955, 965, 970, and 975 Third Street, and therefore, in accordance with the Work Plan, Wyle proposes to conduct additional soil gas sampling at 955 Third Street and IAQ sampling activities inside each of the other three residences.

In addition, on April 12 and 13, 2005 IAQ sampling was performed in the residence located at 998 Third Street; one outdoor air background sample was collected and one air sample was collected from the crawlspace of the house. This sampling was repeated on June 15, 2005, and results were reported to DTSC on July 15, 2005. In a June 6, 2005 letter, the DTSC requested that Wyle collect IAQ samples within the residence. Therefore, IAQ sampling also will be performed inside the residence at 998 Third Street.

In a letter dated May 27, 2005, the DTSC requested that Wyle conduct IAQ sampling in the three schools to address community concerns regarding the potential for exposure to students and staff from volatile organic compounds (VOCs) potentially migrating from the Site. The locations of the three schools in the relation to the Site are presented in Figure 1.

This TM includes the rationale, scope of work, and procedures for IAQ and/or soil gas sampling activities to be conducted in the four residences and in the three schools and soil gas sampling activities to be conducted at 955 Third Street. All procedures described in this TM were prepared in accordance with ENVIRON's previous TM entitled *Technical Memorandum for Additional Soil Gas Survey, Vapor Probe Installation, and Indoor Air Quality Sampling*", dated August 20, 2004, DTSC's letter entitled *DTSC Comments Technical Memorandum for Additional Soil Gas Survey, Vapor Probe Installation, and Indoor Air Quality Sampling*, dated September 24, 2004, and ENVIRON's TM entitled *Technical Memorandum Summarizing Results of Indoor Air Quality (IAQ) Sampling and Mitigation Activities, and Proposed Scope of Work for Additional IAQ Sampling in Northwest Area*, dated March 1, 2005, and approved by the DTSC June 2, 2005.

## **SITE DESCRIPTION AND BACKGROUND**

The Site occupies approximately 429 acres of land in the city of Norco, Riverside County, California (Figure 1). Adjacent properties include residences in all directions, Norco High School to the west, and a golf course to the east. The Norco Elementary School is located approximately 0.5 mile southwest, and the Norco Intermediate School is located approximately 1.2 miles northwest of the Site.

There are two distinct surface drainage areas for the developed portion of the Site. The majority of the Site (approximately 80 percent) lies within a westerly sloping drainage basin. The remaining portion of the Site (approximately 20 percent), the westernmost portion, lies on westward or northward draining slopes and is located topographically downgradient from recognized test areas (designated as Areas A, B, C, D, E, I, and M).

Wyle first occupied the Site in approximately 1957, starting in the western portion and later expanding in an easterly direction. The various on-site buildings and test areas historically were used for testing aerospace components and systems, and for performing environmental and dynamic simulation tests. Several buildings not used for testing were used for administrative functions, chemical storage, vehicle maintenance, metal machining/parts fabrication, and photographic developing. Chemical use at the Site included explosives, solid rocket motor fuel, cryogenics, petroleum hydrocarbons, hypergolic fuels, and solvents; use of hypergolic fuels and chlorinated solvents was discontinued in the early 1990s. Wyle ceased operations at the Site in October 2004.

Subsurface environmental investigations, which were undertaken at the Site beginning in the mid-1990s, have encompassed soil, sediment, storm water runoff, surface water, soil gas, and ground water at the Site, and off the Site to the north, west, and south. Beginning in 1999, these investigations were overseen by the Santa Ana Regional Water Quality Control Board (RWQCB). In October of 2003, the DTSC became the designated lead agency for the Site and a Consent Order was executed (Consent Order HSA-CO 03/04-042). Since that time, all investigative and remedial work conducted at the Site has been overseen and directed by the DTSC.

## PREVIOUS INVESTIGATIONS RELEVANT TO THIS TM

In early 2004, after receipt of DTSC approval, ENVIRON conducted the scope of work described in the *Revised Work Plan for Additional Investigation Along Site Boundaries* (Site Boundaries Work Plan), dated December 31, 2003. The completed investigation activities conducted along the Site boundaries are fully described in ENVIRON's report entitled *Revised Report of Additional Investigation Along Site Boundary*, dated December 22, 2004. Additional investigation work was described in the Remedial Investigation (RI) Work Plan, dated March 18, 2005, which was approved by DTSC on April 1, 2005, and currently is being implemented. The portion of the investigation relevant to this TM (i.e., active soil gas sampling conducted at 955, 960, 965, 970, 975, and 998 Third Street) is discussed below.

To assess the potential for VOCs in the subsurface in proximity to residences, active soil gas sampling was conducted in the vicinity of the above-listed residences located along Third Street, near the intersection of Third Street and Hillside Avenue. The sampling locations are presented in Figure 2 and the soil gas results are summarized in Table 1 (hard copy analytical data are provided in Attachment A). TCE was the primary VOC detected in the soil gas samples collected in this area; the highest TCE concentrations were reported in the soil gas samples collected at 10 feet below ground surface (bgs) in the vicinity of three residences: 970 Third Street (Boring ASG-8, at 43.98 micrograms per liter [ $\mu\text{g/L}$ ]), 965 Third Street (Boring ASG-13, at 40.76  $\mu\text{g/L}$ ), and 975 Third Street (Boring ASG-6, at 33.8  $\mu\text{g/L}$ ). TCE concentrations reported at these locations were significantly lower in the soil gas samples collected at 5 feet bgs. Based on these active soil gas sampling results, DTSC's June 6, 2005 request, and DTSC's July 11, 2005 letter, Wyle proposes to conduct IAQ sampling inside the four residences on Third Street and continued soil gas monitoring near the foundation of the residence at 955 Third Street. This TM describes the IAQ and/or soil gas sampling activities that will be performed at the residences.

## SCOPE OF WORK

### IAQ Sampling at the Residences on Third Street

IAQ sampling activities will be conducted at the four residences located at 965, 970, 975, and 998 Third Street in Norco, California (see Figure 2 for the locations of the residences). Approximately one week prior to conducting IAQ sampling, ENVIRON will perform a pre-screening survey at the four homes using a survey form included in the State of Massachusetts Indoor Air Guidance (Attachment B of this TM) which previously was provided to ENVIRON by the DTSC. A walkthrough of each of the residences will be conducted with the resident present, to identify utility corridors, sumps, pipes, and/or visible cracks in the building foundation (e.g., potential preferential vapor migration pathways). The location of each identified potential preferential pathway will be recorded, diagrammed, and screened for the presence of total organic vapors using a photoionization detector (PID) with a 10.6-electron-volt lamp calibrated against an isobutylene standard. PID readings from each identified potential preferential pathway will be recorded on a field form. In addition, commercial and household products stored within each residence will be inventoried to provide an accurate accounting of chemicals in the residence at the time of the IAQ sampling. Each room will be inspected, the observed products listed on an inventory form

(Attachment B of this TM), and PID measurements will be taken and recorded near areas of stored materials.

IAQ samples will be collected in an environment of each residence that is representative of normal building use; therefore, heating ventilation and air conditioning (HVAC) systems will be operated normally for the season and time of day. Three IAQ samples will be obtained inside each residence using 6-liter pre-cleaned, individually certified, and vacuumed SUMMA™ canisters, each equipped with calibrated flow controllers. The flow rate of the flow controllers will be pre-set at the laboratory for a 24-hour sampling duration. At each residence, sample locations will include one bathroom, one master bedroom and a living room. The sampling containers will be placed in the breathing zone, approximately 3- to 5-feet above the floor. One upwind outdoor air sample, placed approximately 5-feet off the ground, will be collected near each residence to obtain background air concentrations. After a period of 24 hours, sample containers will be closed, collected, and transported to a California-certified laboratory, under chain-of-custody protocol for analysis for perchloroethene (PCE), TCE, the cis and trans isomers of dichloroethene (DCE) and vinyl chloride (VC) using Environmental Protection Agency (EPA) Method TO-15.

All IAQ sampling activities will be conducted in accordance to the Indoor Air Quality Sampling Protocol included in this TM as Attachment B

#### **Nested Vapor Probe Installation and Soil Gas Sampling at the Residences on Third Street**

In its comment letter dated July 11, 2005, DTSC requested installation of permanent vapor probes at each of the four homes where IAQ sampling will be conducted, and at 955 Third Street. Therefore, prior to conducting IAQ sampling at the four homes, ENVIRON will installed one nested vapor well at each home, which will be sampled during the same time interval that IAQ sampling is conducted. A nested vapor probe also will be installed near the residence foundation at 955 Third Street. Nested vapor probes will be installed adjacent to previous active soil gas sampling locations ASG-1, ASG-6, ASG-8, ASG-13, and ASG-17 (these are the locations where the highest VOC concentrations were recorded at each residence).

Prior to initiating field activities, ENVIRON will mark the soil gas sampling location with white paint and contact Underground Service Alert (USA) to mark the location for all major utilities. In addition to the services provided by USA, ENVIRON will contract with a private utility locating company to conduct a geophysical survey in the vicinity of the nested vapor probe location.

Nested vapor probes will be advanced using hollow-stem auger drilling equipment, under the supervision of an experienced ENVIRON geologist or engineer. Nested vapor probes will be installed at depths of 5 and 10 to 15 feet below ground surface (bgs), depending upon the depth at which ground water is encountered in general accordance with the *Drilling and Destruction of Soil Boring Protocol* (Attachment C) and the *Temporary, Permanent, and Semi-Permanent Vapor Probe Installation Protocol* (Attachment D). Upon completion of nested vapor probes, and after allowing several weeks for equilibration, soil gas samples will be obtained from each nested vapor probe, contained in SUMMA™ canisters, and analyzed at a fixed laboratory for PCE, TCE, the cis and trans isomers of DCE, and VC using EPA Method TO-15.

IAQ and nested vapor probe sampling will be repeated in late fall/early winter, as requested by DTSC in its comment letter dated July 11, 2005.

**IAQ Sampling at Norco High School, Norco Intermediate School, and Norco Elementary School**

On June 14, 2005 ENVIRON, accompanied by DTSC personnel and the school principals, conducted walkthroughs of the three Norco schools. The purpose of the walkthroughs was to assess access for IAQ and active soil gas sampling and to identify potential IAQ and active soil gas sampling locations. Sampling locations were selected to provide coverage over the footprint of each school, to assess potential preferential soil gas migration pathways (e.g., one bathroom in each school), to evaluate both permanent and modular classrooms, and to assess potential exposure to the more sensitive populations (e.g., special education and the youngest children [pre-school and kindergarten]). Selected IAQ and active soil gas sampling locations are presented in Figures 3A, 3B, and 3C of this TM. Approximately one week prior to conducting IAQ sampling, ENVIRON will perform a pre-screening survey in each of the selected sampling areas, as described above.

IAQ samples will be collected in an environment of each school that is representative of normal building use; therefore, HVAC systems will be operated normally for the season and time of day. Eight IAQ samples, designated IAQ-HS-1 through IAQ-HS-8, will be collected inside the High School's buildings (Figure 3A); six IAQ samples, designated IAQ-IS-1 through IAQ-IS-6, will be collected inside the Intermediate School's buildings (Figure 3B); and five IAQ samples, designated IAQ-ES-1 through IAQ-ES-5 will be obtained inside the Elementary School's buildings (Figure 3C). All IAQ samples will be collected using 6-liter pre-cleaned, individually certified, and vacuumed SUMMA™ canisters, each equipped with calibrated flow controllers. The flow rate of the flow controllers will be pre-set at the laboratory for a 24-hour sampling duration. The sampling containers will be placed in the breathing zone, approximately 3- to 5-feet above the floor, with the exception of the elementary school, where sampling canisters will be placed approximately 3-feet above the floor. One upwind outdoor air sample, placed approximately 5-feet off the ground, will be collected near each school to obtain background air concentrations. After a period of 24 hours, sample containers will be closed, collected, and transported to a California-certified laboratory, under chain-of-custody protocol for analysis of PCE, TCE, the cis and trans isomers of DCE, and VC using EPA Method TO-15.

**Soil Gas Sampling at Norco High School, Norco Intermediate School, and Norco Elementary School**

At the same time that the IAQ samples are collected inside each school, active soil gas sampling will be conducted outside each school and adjacent to the rooms where the IAQ samples are being collected. Soil gas samples will be collected at 5 and 10 to 15 feet bgs (depending on the depth to ground water) at 12 locations (ASG-HS-1 through ASG-HS-12) at the High School (Figure 3A), 8 locations (ASG-IS-1 through ASG-IS-8) at the Intermediate School (Figure 3B), and at 7 locations (ASG-ES-1 through ASG-ES-7) at the Elementary School (Figure 3C). Active soil gas sampling will be conducted according to the *Active and Passive Soil Vapor Sampling Protocol* included in this TM as Attachment E.

Soil gas samples will be collected using 1-liter pre-cleaned, individually certified, and vacuumed SUMMA™ canisters, each equipped with calibrated flow controllers. The flow rate of the flow controllers will be pre-set at the laboratory to achieve a low sampling rate between 100 to 200 ml/min. Soil gas samples will be screened for PCE, TCE, the cis and trans isomers of DCE, VC, and difluoroethane using EPA Method 8260B, modified for vapor analysis at H&P Mobile Geochemistry onsite laboratory, and subsequently analyzed for these same chemicals using EPA Method TO-15 SIM at H&P's Mobile Geochemistry stationary laboratory. Due to the number of soil gas samples that will be collected at the high school, and the time constraint associated with obtaining all soil gas samples within the same time period as the IAQ samples, it may not be possible to screen all soil gas samples collected at the high school prior to submittal to the fixed laboratory.

Prior to initiating field activities, ENVIRON will mark soil gas sampling locations with white paint and contact USA to mark the locations for all major utilities. In addition to the services provided by USA, ENVIRON will contract with a private utility locating company to conduct a geophysical survey in the vicinity of the active soil gas sampling locations. Upon completion of active soil gas sampling, the boring will be backfilled and patched at the ground surface to match the surrounding area.

A decision regarding the need to repeat IAQ and active soil gas sampling at the three schools will be made after reviewing the initial round of IAQ sampling results.

### **Quality Control Samples**

Quality control samples collected during the performance of the scope of work described herein will include trip blanks and field duplicates. The analytical laboratory will prepare trip blanks and the frequency of analysis will be one per sampling event. Field duplicates will be collected at a frequency of one per sampling event.

## **REPORTING**

Upon completion of the field investigation and receipt of analytical results, all analytical results will undergo internal quality assurance/quality control (QA/QC). Results will be reported to DTSC in a letter report, which will include a description of work conducted in the field, tables summarizing the results (including data qualifiers, if any), figures, laboratory analytical reports, and recommendation for further assessment, if warranted.

## **SCHEDULE**

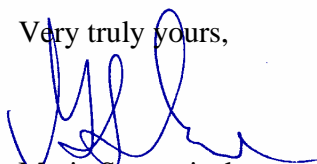
ENVIRON will initiate this investigation immediately upon receipt of DTSC's approval. Currently, ENVIRON has scheduled IAQ and active soil gas sampling at the schools for the week of July 25<sup>th</sup>, 2005. Due to constraints associated with the number of active soil gas samples that can be collected in one day, ENVIRON anticipates that field work will require approximately three days, and will be conducted consecutively, one school at a time. Because the elementary school operates year round, sampling at this school will be conducted on a weekend. Sampling results will be compiled into a letter report, as described above, and reported to DTSC approximately 30 days after completion of all IAQ and active soil gas sampling.

The field schedule for nested vapor probe installation at the five residences depends upon contractor availability, however, at this time ENVIRON anticipates that field work can be conducted in early- to mid-August 2005. IAQ sampling will be conducted approximately one to two weeks after completion of nested vapor probe installation. Sampling results will be compiled into a letter report, as described above, and reported to DTSC approximately 30 days after completion of all IAQ and soil gas sampling at the residences.

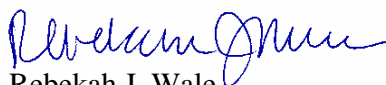
## CLOSURE

ENVIRON understands that this TM has been conditionally approved, pending DTSC's review of the response to DTSC's July 11, 2005 comment letter. Please provide your written approval for the work described in this TM according to the agreed-upon time frame, anticipated to be on the order of ten working days. Please contact Matthew Letany at Wyle at (310) 563-6630 if you have questions regarding this submittal.

Very truly yours,



Maria Szweminska  
Senior Associate



Rebekah J. Wale  
Manager



Carol L. Serlin, P.G.  
Principal

Attachments:	Table 1:	Active Soil Gas Sampling-Summary of VOCs in Soil Gas
	Figure 1:	Site Vicinity Map
	Figure 2:	Active Soil Gas Sampling Locations
	Figure 3A:	Proposed Active Soil Gas and Indoor Air Quality Sampling Locations at Norco High School
	Figure 3B:	Proposed Active Soil Gas and Indoor Air Quality Sampling Locations at Norco Intermediate School
	Figure 3C:	Proposed Active Soil Gas and Indoor Air Quality Sampling Locations at Norco Elementary School
	Attachment A:	Laboratory Data Reports
	Attachment B:	Indoor Air Quality Sampling Protocol
	Attachment C:	Drilling and Destruction of Soil Boring Protocol
	Attachment D:	Temporary, Permanent and Semi-Permanent Nested Vapor Probe Installation Protocol
	Attachment E:	Active and Passive Soil Gas Sampling Protocol



cc: Distribution (w/enclosures)

## TABLES



**TABLE 1**  
**Summary of Detected VOCs in Soil Gas - Northwest Area**  
**Wyle Laboratories, Norco, California**

Sample Number	Date Sampled	Sample Depth (ft)	Unit	Compound															
				1,1,1-TCA	1,2,4-TMB	1,3,5-TMB	1,1-DCA	Acetone	Benzene	Bromo form	CCl4	Chloro benzene	Chloro form	cis-1,2-DCE	CS2	DCFM	Ethyl benzene	Freon 113	HBDE
ASG1	4/12/05	5	µg/L	0.16	<0.049	<0.049	<0.04	0.31	<0.032	<0.1	<0.063	<0.046	<0.049	<0.04	<0.031	<0.049	<0.043	0.16	<0.11
ASG1	4/12/05	5	µg/L	0.12	<0.098	<0.098	<0.081	<0.48	<0.064	<0.21	<0.12	<0.092	<0.098	<0.079	<0.062	<0.099	<0.087	<0.15	<0.21
ASG1	4/12/05	12	µg/L	<0.0054	<0.0049	<0.0049	<0.004	0.076	0.0077	<0.01	<0.0063	<0.0046	<0.0049	<0.004	0.0056	<0.0049	0.02	<0.0077	<0.011
ASG2	4/12/05	5	µg/L	0.34	<0.049	<0.049	0.11	0.31	<0.032	<0.1	<0.063	<0.046	<0.049	<0.04	<0.031	<0.049	0.048	0.14	<0.11
ASG2	4/12/05	12	µg/L	0.071	<0.02	<0.02	0.019	0.17	<0.013	<0.041	<0.025	<0.018	<0.02	<0.016	0.014	<0.02	0.033	<0.031	<0.043
ASG3	4/12/05	5	µg/L	<0.0054	<0.0049	<0.0049	<0.004	0.097	0.011	<0.01	<0.0063	<0.0046	<0.0049	<0.004	0.0087	<0.0049	0.0078	<0.0077	<0.011
ASG4	4/12/05	5	µg/L	<0.0054	0.34	0.0064	<0.004	1.7	0.017	<0.01	<0.0063	0.0055	<0.0049	<0.004	0.0096	<0.0049	0.65	<0.0077	0.013
ASG4	4/12/05	12	µg/L	<0.0054	<0.0049	<0.0049	<0.004	0.052	0.015	<0.01	<0.0063	<0.0046	<0.0049	<0.004	0.03	<0.0049	0.0078	<0.0077	<0.011
ASG-5	6/7/05	5	µg/L	<0.0027	0.084	0.054	<0.002	0.11	0.023	<0.0052	<0.0031	<0.0046	0.01	<0.004	0.011	0.0025	0.78	0.10	<0.011
ASG-5	6/7/05	10	µg/L	<0.011	0.098	0.054	<0.0081	0.28	0.035	0.12	<0.012	<0.018	0.01	<0.016	0.026	<0.0099	2.6	0.24	<0.043
ASG-6	6/7/05	5	µg/L	<0.0027	0.12	0.059	<0.002	0.12	0.019	<0.0052	<0.0031	<0.0046	0.0098	<0.004	0.014	<0.0025	0.56	0.042	<0.011
ASG-6	6/7/05	10	µg/L	<0.027	0.069	0.036	<0.02	<0.24	0.024	0.069	<0.031	<0.046	0.037	<0.04	0.022	<0.025	2.2	1.2	<0.11
ASG-6	6/7/05	10	µg/L	<0.027	0.069	0.038	<0.02	0.26	0.021	0.061	<0.031	<0.046	0.043	<0.04	<0.016	<0.025	2.2	1.1	<0.11
ASG-7	6/7/05	5	µg/L	<0.0027	0.079	0.039	<0.002	0.12	0.021	<0.0052	<0.0031	<0.0046	0.0068	<0.004	0.013	<0.0025	0.61	0.014	<0.011
ASG-7	6/7/05	10	µg/L	<0.011	0.059	0.03	<0.0081	1	0.023	0.067	<0.012	<0.018	<0.0098	<0.016	0.02	<0.0099	1.2	0.043	<0.043
ASG8	5/20/05	5	µg/L	<0.027	<0.049	<0.024	<0.02	0.5	0.051	<0.052	<0.031	<0.046	0.063	<0.04	0.1	<0.025	0.12	0.17	<0.11
ASG8	5/20/05	10	µg/L	<0.14	<0.24	<0.12	<0.1	<1.2	<0.08	<0.26	<0.16	<0.23	0.23	<0.2	0.14	<0.12	0.12	0.47	<0.53
ASG9	5/20/05	5	µg/L	<0.0027	0.0098	<0.0024	<0.002	0.04	0.018	<0.0052	<0.0031	<0.0046	0.0083	<0.004	0.056	0.003	0.0052	0.018	<0.011
ASG9	5/20/05	10	µg/L	<0.011	0.54	0.027	<0.0081	0.78	0.096	<0.021	<0.012	<0.018	0.048	<0.016	0.068	<0.0099	0.087	0.46	<0.043
ASG10	5/20/05	5	µg/L	<0.014	0.46	0.028	<0.01	3.1J	0.1	<0.026	<0.016	<0.023	0.016	<0.02	0.10	<0.012	0.96	0.29	<0.053

**TABLE 1**  
**Summary of Detected VOCs in Soil Gas - Northwest Area**  
**Wyle Laboratories, Norco, California**

Sample Number	Date Sampled	Sample Depth	Units	Compound												
				MEK	Bromo methane	Chloro methane	MeCl	MIBK	m,p- xylene	o- xylene	PCE	PET	Styrene	TCE	TCFM	Toluene
ASG1	4/12/05	5	µg/L	<b>0.077</b>	<0.04	<0.02	<b>0.038</b>	<0.04	<b>0.065</b>	<b>0.052</b>	<0.07	<0.05	<b>0.094</b>	<b>5.3</b>	<b>0.33</b>	<b>0.11</b>
ASG1	4/12/05	5	µg/L	<b>0.08</b>	<0.08	<0.04	<0.07	<0.08	<0.09	<0.09	<0.1	<0.01	<b>0.17</b>	<b>5.9</b>	<b>0.33</b>	<b>0.12</b>
ASG1	4/12/05	12	µg/L	<b>0.038</b>	<0.0039	<b>0.0023</b>	<0.0035	<0.0041	<b>0.036</b>	<b>0.016</b>	<0.0068	<0.0049	<b>0.0077</b>	<b>0.86</b>	<b>0.015</b>	<b>0.017</b>
ASG2	4/12/05	5	µg/L	<b>0.062</b>	<0.04	<0.02	<b>0.038</b>	<0.04	<b>0.09</b>	<b>0.065</b>	<b>0.081</b>	<0.05	<b>0.089</b>	<b>3</b>	<b>0.1</b>	<b>0.14</b>
ASG2	4/12/05	12	µg/L	<b>0.02</b>	<0.016	<b>0.07</b>	<0.014	<0.016	<b>0.069</b>	<b>0.043</b>	<b>0.033</b>	<0.02	<b>0.047</b>	<b>0.64</b>	<b>0.025</b>	<b>0.083</b>
ASG3	4/12/05	5	µg/L	<b>0.028</b>	<0.0039	<0.0021	<0.0035	<b>0.0057</b>	<b>0.014</b>	<b>0.01</b>	<0.0068	<0.0049	<b>0.0089</b>	<b>0.01</b>	<0.0056	<b>0.02</b>
ASG4	4/12/05	5	µg/L	<b>0.03</b>	<0.0039	<b>0.2</b>	<0.0035	<b>0.0057</b>	<b>1.1</b>	<b>0.42</b>	<0.0068	<b>0.02</b>	<b>0.011</b>	<b>0.0075</b>	<0.0056	<b>0.017</b>
ASG4	4/12/05	12	µg/L	<b>0.012</b>	<0.0039	<0.0021	<b>0.0042</b>	<0.0041	<b>0.013</b>	<b>0.011</b>	<0.0068	<0.0049	<b>0.011</b>	<b>0.086</b>	<0.0056	<b>0.021</b>
ASG-5	6/7/05	5	µg/L	<b>0.028</b>	<0.0039	<0.0021	<0.0035	<0.002	<b>1.2</b>	<b>0.52</b>	<0.0068	<b>0.024</b>	<b>0.011</b>	<b>2.8</b>	<b>0.41</b>	<b>0.29</b>
ASG-5	6/7/05	10	µg/L	<b>0.035</b>	<0.016	<0.0083	<b>0.026</b>	<0.0082	<b>4</b>	<b>1.3</b>	<0.027	<b>0.026</b>	<b>0.051</b>	<b>6.4</b>	<b>0.67</b>	<b>0.35</b>
ASG-6	6/7/05	5	µg/L	<b>0.02</b>	<0.0039	<0.0021	<b>0.0042</b>	<0.002	<b>1.1</b>	<b>0.42</b>	<0.0068	<b>0.03</b>	<b>0.01</b>	<b>0.86</b>	<b>0.16</b>	<b>0.19</b>
ASG-6	6/7/05	10	µg/L	<b>0.032</b>	<0.04	<0.02	<0.03	<0.02	<b>3.5</b>	<b>1.1</b>	<0.07	<0.05	<b>0.068</b>	<b>25</b>	<b>3.1</b>	<b>0.24</b>
ASG-6	6/7/05	10	µg/L	<b>0.041</b>	<0.04	<0.02	<0.03	<0.02	<b>4</b>	<b>1.2</b>	<b>0.75</b>	<0.05	<b>0.068</b>	<b>34</b>	<b>2.9</b>	<b>0.21</b>
ASG-7	6/7/05	5	µg/L	<b>0.027</b>	<0.0039	<0.0021	<0.0035	<0.002	<b>1.1</b>	<b>0.48</b>	<b>0.0081</b>	<b>0.019</b>	<b>0.011</b>	<b>1.8</b>	<b>0.03</b>	<b>0.17</b>
ASG-7	6/7/05	10	µg/L	<b>0.083</b>	<0.016	<0.0083	<0.014	<0.0082	<b>2.1</b>	<b>0.96</b>	<0.027	<0.02	<b>0.037</b>	<b>0.59</b>	<b>0.031</b>	<b>0.17</b>
ASG8	5/20/05	5	µg/L	<b>0.074</b>	<0.04	<0.02	<b>0.049</b>	<0.02	<b>0.3</b>	<b>0.17</b>	<b>3.2</b>	<0.05	<b>0.051</b>	<b>12</b>	<b>0.34</b>	<b>0.12</b>
ASG8	5/20/05	10	µg/L	<0.1	<0.2	<0.1	<0.2	<0.1	<b>0.19</b>	<b>0.12</b>	<0.3	<0.2	<b>0.22</b>	<b>44</b>	<b>1.5</b>	<0.2
ASG9	5/20/05	5	µg/L	<b>0.014</b>	<0.0039	<0.0021	<0.0035	<0.002	<b>0.012</b>	<b>0.0074</b>	<b>0.049</b>	<0.0049	<b>0.0047</b>	<b>2</b>	<b>0.079</b>	<b>0.018</b>
ASG9	5/20/05	10	µg/L	<b>0.15</b>	<b>0.13</b>	<b>0.058</b>	<b>0.12</b>	<b>0.025</b>	<b>0.15</b>	<b>0.1</b>	<b>2.1</b>	<b>0.04</b>	<b>0.047</b>	<b>18</b>	<b>0.96</b>	<b>0.4</b>
ASG10	5/20/05	5	µg/L	<b>0.41</b>	<b>0.14</b>	<b>0.06</b>	<b>0.09</b>	<b>0.039</b>	<b>2</b>	<b>0.9</b>	<b>1.8</b>	<b>0.043</b>	<b>0.055</b>	<b>0.59</b>	<b>0.019</b>	<b>0.4</b>

**TABLE 1**  
**Summary of Detected VOCs in Soil Gas - Northwest Area**  
**Wyle Laboratories, Norco, California**

Sample Number	Date Sampled	Sample Depth (ft)	Unit	Compound															
				1,1,1-TCA	1,2,4-TMB	1,3,5-TMB	1,1-DCA	Acetone	Benzene	Bromo form	CCl4	Chloro benzene	Chloro form	cis-1,2-DCE	CS2	DCFM	Ethyl benzene	Freon 113	HBDE
ASG11	5/19/05	5	µg/L	<0.0027	0.014	0.0034	<0.002	0.088	0.042	<0.0052	<0.0031	<0.0046	<0.0024	<0.004	0.021	<0.0025	0.0078	0.025	<0.011
ASG11	5/19/05	10	µg/L	<0.0027	0.026	0.0059	<0.002	0.28	0.045	<0.0052	<0.0031	<0.0046	<0.0024	<0.004	0.0065	<0.0025	0.012	<0.0038	<0.011
ASG12	5/19/05	5	µg/L	<0.014	<0.024	<0.012	<0.01	0.12	0.012	<0.026	<0.016	<0.023	0.015	<0.02	0.02	<0.012	0.022	0.13	<0.053
ASG12	5/19/05	10	µg/L	<0.0027	0.047	0.0098	<0.002	2.1J	0.22	<0.0052	<0.0031	<0.0046	0.049	<0.004	0.065	0.0064	0.13	0.14	<0.011
ASG13	5/20/05	5	µg/L	<0.027	0.19	0.045	<0.02	0.71	0.17	<0.052	<0.031	<0.046	0.044	<0.04	0.087	0.037	0.29	1.7	<0.11
ASG13	5/20/05	10	µg/L	<0.14	<0.24	<0.12	<0.1	<1.2	0.1	<0.26	<0.16	<0.23	0.19	<0.2	0.19	<0.12	0.13	0.92	<0.53
ASG14	5/19/05	5	µg/L	<0.0027	0.021	0.0049	<0.002	0.55	0.048	<0.0052	<0.0031	<0.0046	0.0054	<0.004	0.081	<0.0025	0.019	0.0046	<0.011
ASG15	5/19/05	5	µg/L	<0.0027	0.026	0.0059	<0.002	0.069	0.035	<0.0052	<0.0031	<0.0046	<0.0024	<0.004	0.017	<0.0025	0.034	0.0077	<0.011
ASG15	5/19/05	10	µg/L	<0.0027	0.011	<0.0024	<0.002	0.078	0.0099	<0.0052	<0.0031	<0.0046	<0.0024	<0.004	0.0031	<0.0025	0.0078	0.018	<0.011
ASG16	5/19/05	5	µg/L	<0.0027	0.03	0.0069	<0.002	0.19	0.015	<0.0052	<0.0031	<0.0046	<0.0024	<0.004	0.0037	<0.0025	0.018	<0.0038	<0.011
ASG17	5/20/05	5	µg/L	<0.011	0.35	0.049	<0.0081	1.4	0.1	<0.021	<0.012	<0.018	0.029	0.026	0.12	<0.0099	0.078	0.24	<0.043
ASG17	5/20/05	10	µg/L	<0.0027	0.029	0.0064	<0.002	0.038	0.007	<0.0052	<0.0031	<0.0046	<0.0024	<0.004	<0.0016	<0.0025	0.034	<0.0038	<0.011
ASG18	5/20/05	5	µg/L	<0.0027	0.036	0.0069	<0.002	0.69J	0.03	<0.0052	<0.0031	<0.0046	<0.0024	<0.004	0.012	<0.0025	0.3	<0.0038	<0.011
ASG19	5/20/05	5	µg/L	<0.027	0.16	0.047	<0.02	2.4	0.07	<0.052	<0.031	<0.046	0.059	<0.04	0.13	<0.025	1.5	0.15	<0.11

**TABLE 1**  
**Summary of Detected VOCs in Soil Gas - Northwest Area**  
**Wyle Laboratories, Norco, California**

Sample Number	Date Sampled	Sample Depth	Units	Compound												
				MEK	Bromo methane	Chloro methane	MeCl	MIBK	m,p- xylene	o- xylene	PCE	PET	Styrene	TCE	TCFM	Toluene
ASG11	5/19/05	5	µg/L	<b>0.03</b>	<0.0039	<0.0021	<b>0.0052</b>	<b>0.004</b>	<b>0.014</b>	<b>0.01</b>	<0.0068	<0.0049	<b>0.0051</b>	<b>0.18</b>	<b>0.044</b>	<b>0.03</b>
ASG11	5/19/05	10	µg/L	<b>0.083</b>	<0.0039	<b>0.005</b>	<0.0035	<b>0.0066</b>	<b>0.027</b>	<b>0.019</b>	<0.0068	<b>0.0069</b>	<0.0043	<b>0.034</b>	<b>0.005</b>	<b>0.041</b>
ASG12	5/19/05	5	µg/L	<b>0.028</b>	<0.019	<0.01	<b>0.049</b>	<b>0.015</b>	<b>0.043</b>	<b>0.03</b>	<0.034	<0.025	<b>0.032</b>	<b>1.5</b>	<b>0.16</b>	<b>0.045</b>
ASG12	5/19/05	10	µg/L	<b>0.65</b>	<0.0039	<b>0.019</b>	<b>0.0059</b>	<b>0.049</b>	<b>0.28</b>	<b>0.17</b>	<b>0.013</b>	<b>0.013</b>	<b>0.014</b>	<b>5J</b>	<b>0.4</b>	<b>0.11</b>
ASG13	5/20/05	5	µg/L	<b>0.18</b>	<0.04	<b>0.029</b>	<b>0.32</b>	<b>0.025</b>	<b>0.74</b>	<b>0.4</b>	<b>0.51</b>	<0.05	<b>0.068</b>	<b>11</b>	<b>0.47</b>	<b>0.87</b>
ASG13	5/20/05	10	µg/L	<0.1	<0.2	<0.1	<0.2	<0.1	<b>0.2</b>	<b>0.14</b>	<0.3	<0.2	<0.2	<b>41</b>	<b>2.3</b>	<0.2
ASG14	5/19/05	5	µg/L	<b>0.17</b>	<0.0039	<0.0021	<0.0035	<b>0.011</b>	<b>0.032</b>	<b>0.02</b>	<b>0.16</b>	<b>0.0054</b>	<b>0.0068</b>	<b>0.02</b>	<b>0.013</b>	<b>0.053</b>
ASG15	5/19/05	5	µg/L	<b>0.047</b>	<0.0039	<0.0021	<0.0035	<b>0.0049</b>	<b>0.078</b>	<b>0.048</b>	<0.0068	<b>0.0079</b>	<0.0043	<b>0.028</b>	<b>0.017</b>	<b>0.08</b>
ASG15	5/19/05	10	µg/L	<b>0.035</b>	<0.0039	<0.0021	<b>0.03</b>	<0.002	<b>0.02</b>	<b>0.011</b>	<0.0068	<0.0049	<0.0043	<b>0.01</b>	<b>0.003</b>	<b>0.034</b>
ASG16	5/19/05	5	µg/L	<b>0.065</b>	<0.0039	<0.0021	<0.0035	<b>0.0057</b>	<b>0.048</b>	<b>0.03</b>	<0.0068	<b>0.0079</b>	<0.0043	<0.0054	<0.003	<b>0.057</b>
ASG17	5/20/05	5	µg/L	<b>0.47</b>	<b>0.2</b>	<b>0.11</b>	<b>0.094</b>	<b>0.036</b>	<b>0.19</b>	<b>0.1</b>	<b>1.7</b>	<b>0.05</b>	<b>0.051</b>	<b>3.4</b>	<b>0.18</b>	<b>0.35</b>
ASG17	5/20/05	10	µg/L	<b>0.0065</b>	<0.0039	<0.0021	<0.0035	<0.002	<b>0.096</b>	<b>0.056</b>	<0.0068	<b>0.0074</b>	<0.0043	<b>0.03</b>	<0.003	<b>0.031</b>
ASG18	5/20/05	5	µg/L	<b>0.22</b>	<0.0039	<b>0.0033</b>	<0.0035	<b>0.014</b>	<b>0.61</b>	<b>0.48</b>	<b>0.024</b>	<b>0.0088</b>	<0.0043	<b>0.052</b>	<b>0.004</b>	<b>0.12</b>
ASG19	5/20/05	5	µg/L	<b>0.6</b>	<b>0.15</b>	<b>0.058</b>	<b>0.063</b>	<b>0.07</b>	<b>3.6</b>	<b>1.9</b>	<b>1</b>	<0.05	<b>0.077</b>	<b>5.9</b>	<b>0.09</b>	<b>0.22</b>

**TABLE 1**  
**Summary of Detected VOCs in Soil Gas - Northwest Area**  
**Wyle Laboratories, Norco, California**

Sample Number	Date Sampled	Sample Depth	Units	Compound											
				MEK	Bromo methane	Chloro methane	MeCl	MIBK	m,p- xylene	o- xylene	PCE	PET	Styrene	TCE	TCFM

Abbreviations

1,1,1-TCA = 1,1,1-Trichloroethane  
 Freon 113 = 1,1,2-trichloro-1,2,2-trifluoroethane  
 1,1-DCA = 1,1-Dichloroethane  
 1,2,4-TMB = 1,2,4-trimethylbenzene  
 1,3,5-TMB = 1,3,5-trimethylbenzene  
 MEK = 2-butanone (methyl ethyl ketone)  
 PET = p-Ethyltoluene  
 MIBK = 4-methyl-2-pentanone  
 CS<sub>2</sub> = Carbon disulfide  
 CCl<sub>4</sub> = Carbon tetrachloride  
 cis-1,2-DCE = cis-1,2-Dichloroethylene  
 DCFM = Dichlorodifluoromethane  
 HBDE = Hexachlorobutadiene  
 MeCL = Methylene chloride  
 PCE = Tetrachloroethylene  
 TCE = Trichloroethylene  
 TCFM = Trichlorofluoromethane

NA = Not Analyzed

µg/L = micrograms per liter

Only samples with detected compounds above laboratory reporting limits are shown in this table.

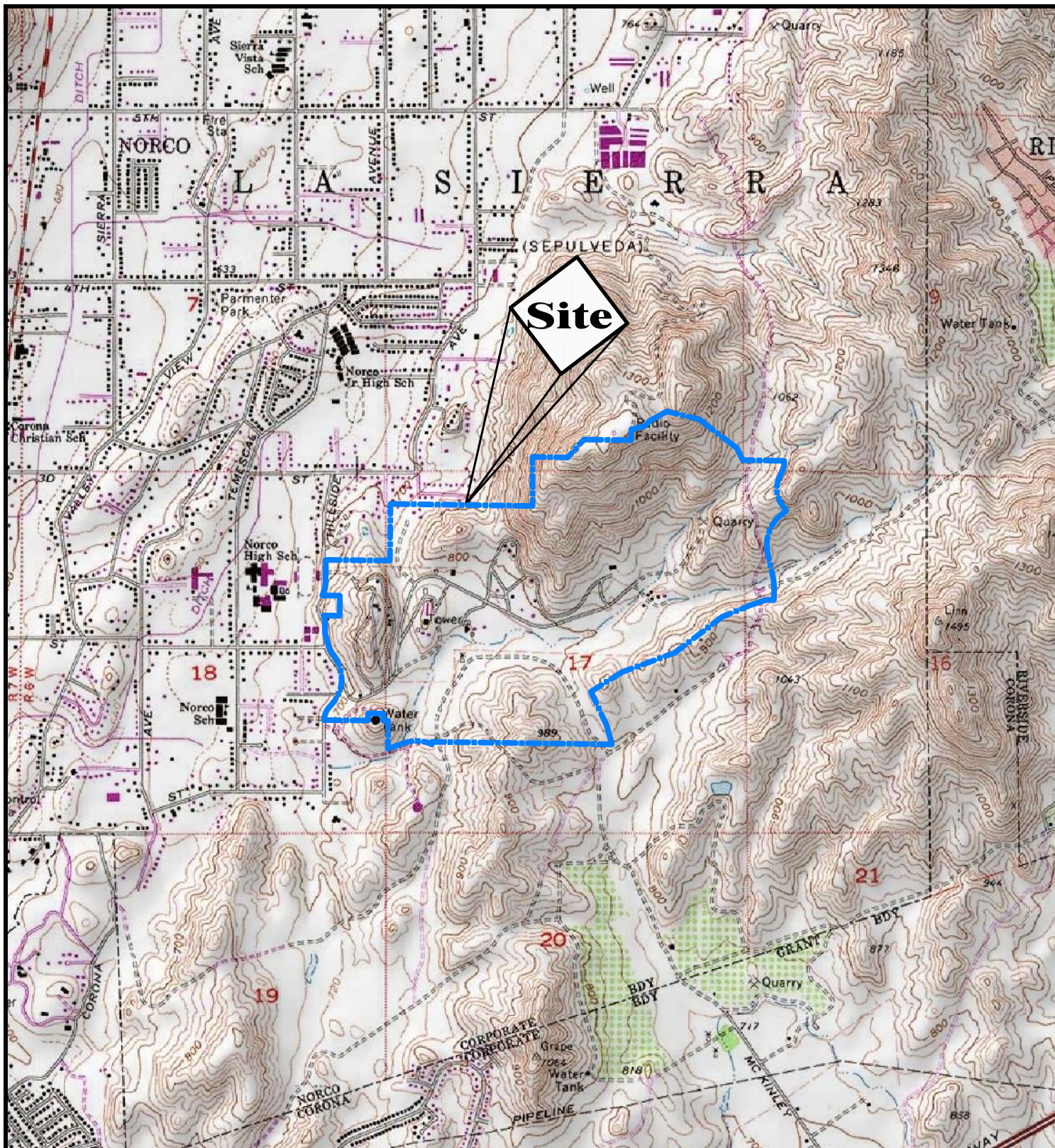
Based on data validation, qualifiers (J, U, UJ, NJ) indicate estimated results. See text for explanation of qualifiers.

Duplicate results shown in italics.

Because the laboratory was unable to provide electronic data in µg/L, the results shown in this table have been converted from the electronic data files provided by the laboratory in parts per billion by volume. ENVIRON assumed standard conditions for the conversion. The values shown in this table may be slightly different than those reported by the laboratory for final laboratory reports in µg/L. The discrepancy is due to rounding errors and use of significant digits, and is negligible.

## FIGURES





SOURCE:  
U.S.G.S. 7.5 minute series (topographic)  
Corona North Quadrangle, CA, version 1978, current as of 1981

0 1/2 1 MILE  
2000 0 2000 4000 FEET

CONTOUR INTERVAL 40 FEET  
DOTTED LINES REPRESENT 10-FOOT CONTOURS  
NATIONAL GEODETIC VERTICAL DATUM OF 1929  
SCALE 1:24000



**ENVIRON**

# Site Vicinity Map

Wyle Laboratories  
1841 Hillside Avenue, Norco, California

Figure  
**1**

Drafter: JJC

Date: 1/31/02

Contract Number:

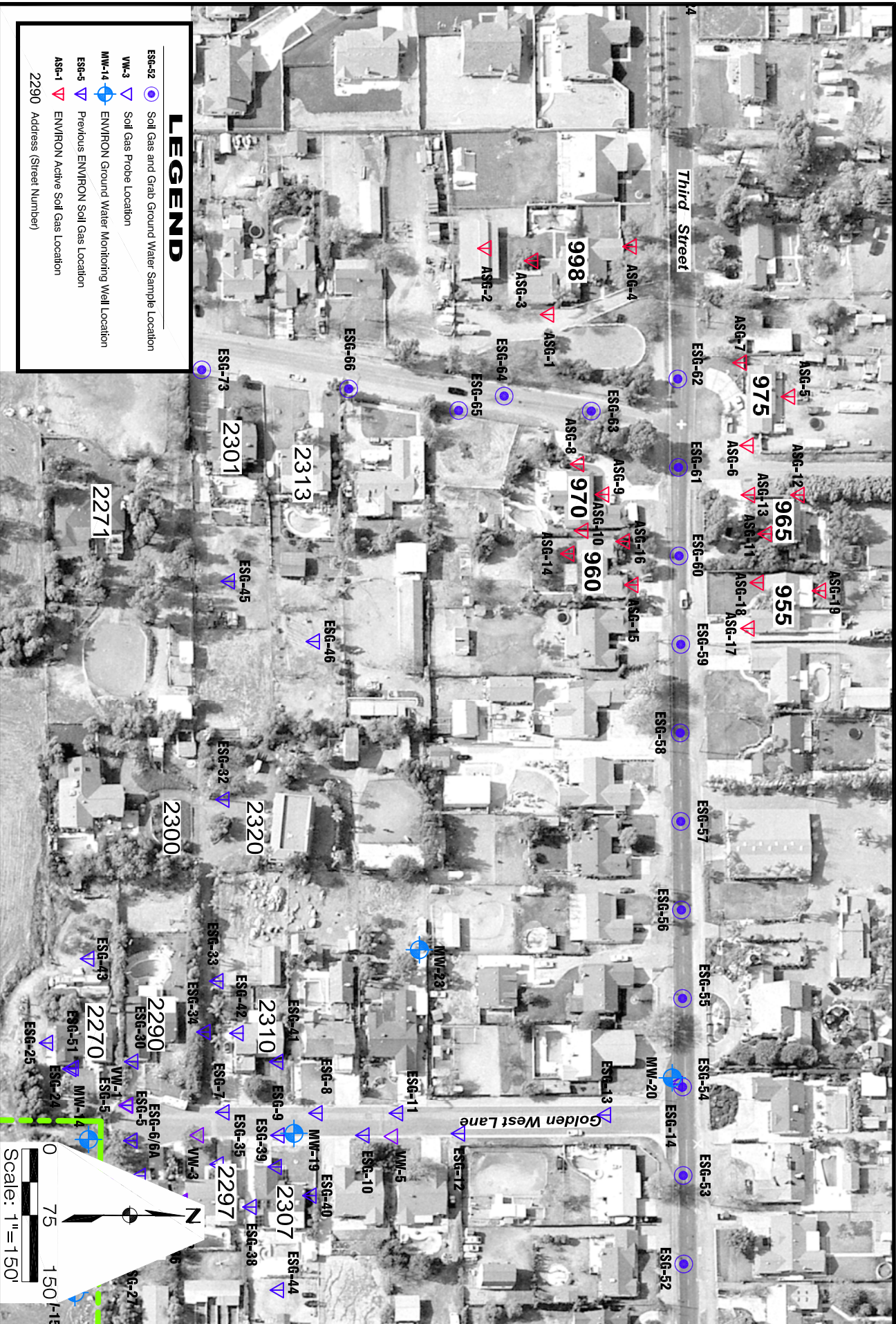
04-8099D

Approved:

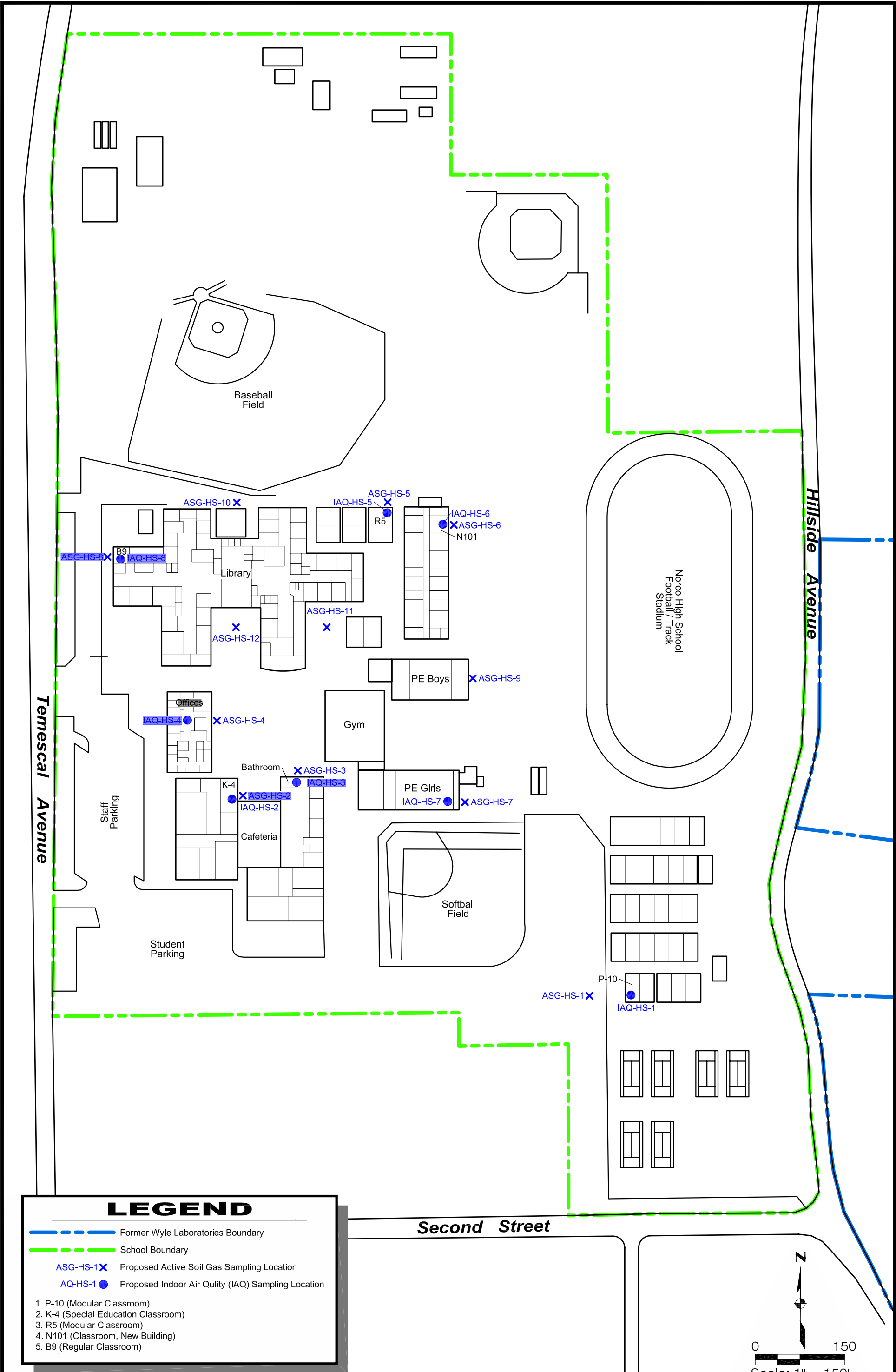
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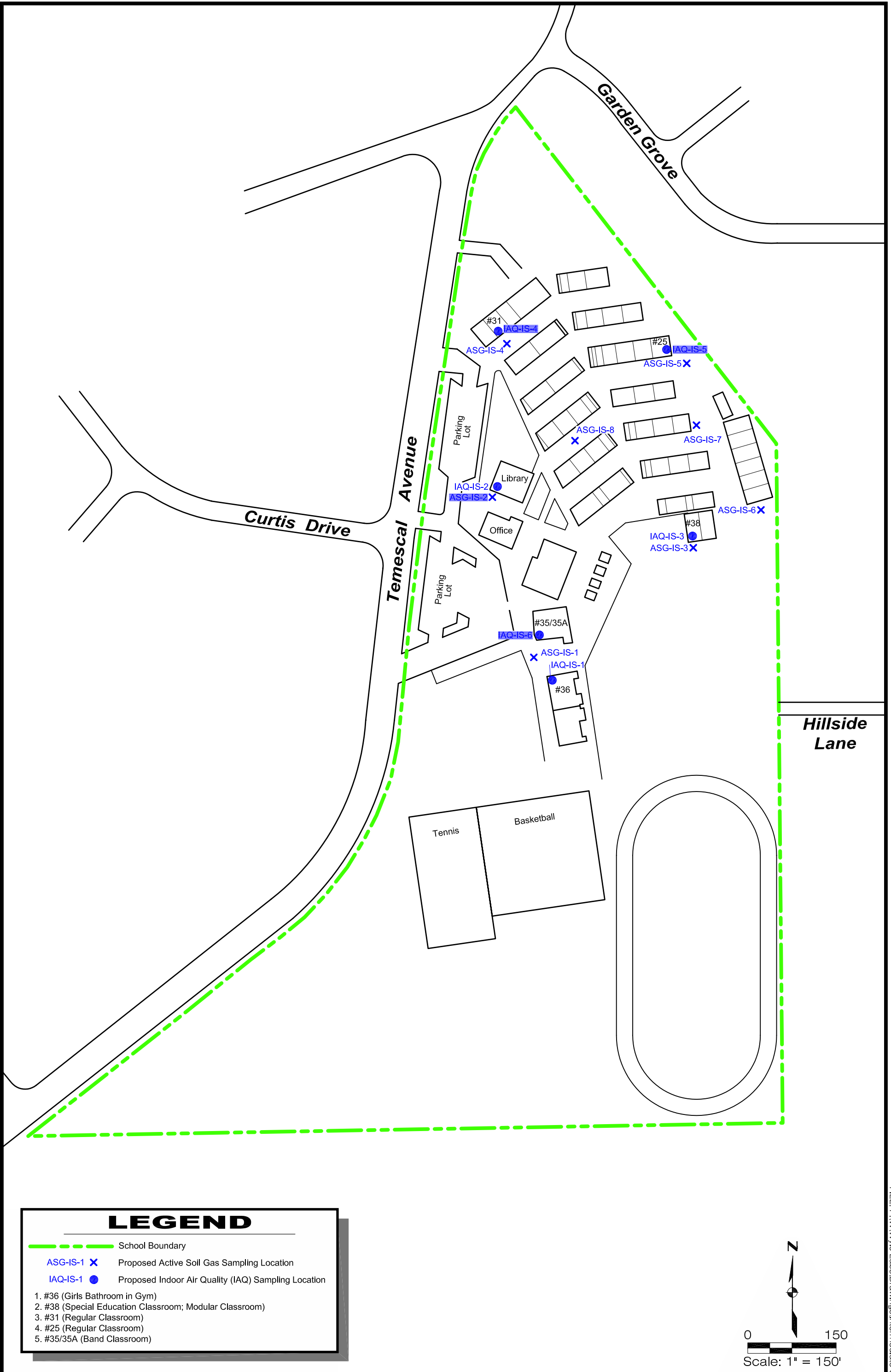
11/21/03

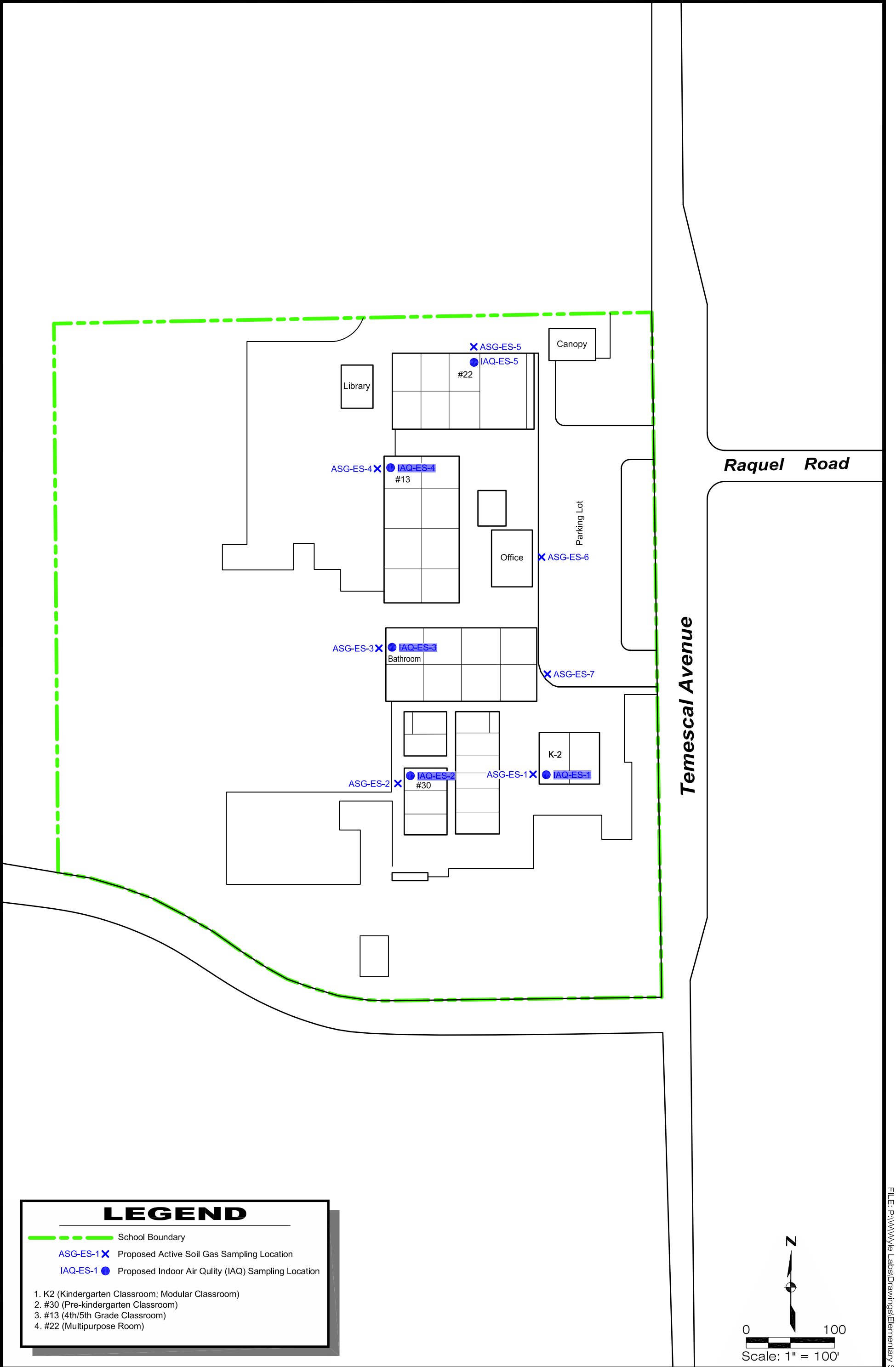












## ATTACHMENT A

### Laboratory Data Reports



Environ Corp  
2010 Main Street, Suite 900  
Irvine CA, 92614

Project: ENV041205-10  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
09-May-05

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ASG1-5'	7504002-04	Vapor	12-Apr-05	12-Apr-05
ASG1-5' DUPE	7504002-05	Vapor	12-Apr-05	12-Apr-05
ASG1-12'	7504002-06	Vapor	12-Apr-05	12-Apr-05
ASG2-12'	7504002-07	Vapor	12-Apr-05	12-Apr-05
ASG2-5'	7504002-08	Vapor	12-Apr-05	12-Apr-05
ASG4-12'	7504002-09	Vapor	12-Apr-05	12-Apr-05
ASG3-5'	7504002-10	Vapor	12-Apr-05	12-Apr-05
ASG4-5'	7504002-11	Vapor	12-Apr-05	12-Apr-05
TRIP BLANK	7504002-12	Vapor	12-Apr-05	12-Apr-05



Environ Corp  
2010 Main Street, Suite 900  
Irvine CA, 92614

Project: ENV041205-10  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
09-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG1-5' (7504002-04) Vapor    Sampled: 12-Apr-05    Received: 12-Apr-05</b>									
Dichlorodifluoromethane	ND	0.049	ug/L	10	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
Chloromethane	ND	0.021	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.070	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.026	ug/L	"	"	"	"	"	
Bromomethane	ND	0.039	ug/L	"	"	"	"	"	
Chloroethane	ND	0.026	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.325	0.056	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.308	0.237	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.161	0.076	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.038	0.035	ug/L	"	"	"	"	"	
Carbon disulfide	ND	0.031	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.036	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.035	ug/L	"	"	"	"	"	
<b>1,1-Dichloroethane</b>	0.040	0.040	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.077	0.029	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
Chloroform	ND	0.049	ug/L	"	"	"	"	"	
<b>1,1,1-Trichloroethane</b>	0.144	0.050	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.040	ug/L	"	"	"	"	"	
Benzene	ND	0.032	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.063	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	5.310	0.054	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.046	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.067	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.045	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.041	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.045	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.105	0.038	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.050	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.041	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.085	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.068	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.077	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.046	ug/L	"	"	"	"	"	
Ethylbenzene	ND	0.043	ug/L	"	"	"	"	"	



Environ Corp  
2010 Main Street, Suite 900  
Irvine CA, 92614

Project: ENV041205-10  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
09-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG1-5' (7504002-04) Vapor    Sampled: 12-Apr-05    Received: 12-Apr-05</b>									
<b>m,p-Xylene</b>	0.065	0.043	ug/L	10	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Styrene</b>	0.093	0.042	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.052	0.043	ug/L	"	"	"	"	"	
Bromoform	ND	0.103	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.068	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.049	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.049	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.049	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.052	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.074	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.106	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		87.2 %	75-125		"	"	"	"	
<b>ASG1-5' DUPE (7504002-05) Vapor    Sampled: 12-Apr-05    Received: 12-Apr-05</b>									
Dichlorodifluoromethane	ND	0.099	ug/L	20	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
Chloromethane	ND	0.041	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.140	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.051	ug/L	"	"	"	"	"	
Bromomethane	ND	0.077	ug/L	"	"	"	"	"	
Chloroethane	ND	0.053	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.325	0.112	ug/L	"	"	"	"	"	
Acetone	ND	0.474	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.079	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	ND	0.153	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.069	ug/L	"	"	"	"	"	
Carbon disulfide	ND	0.062	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.079	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.072	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.070	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.081	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.079	0.059	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.079	ug/L	"	"	"	"	"	
Chloroform	ND	0.097	ug/L	"	"	"	"	"	
<b>1,1,1-Trichloroethane</b>	0.114	0.099	ug/L	"	"	"	"	"	



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### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG1-5' DUPE (7504002-05) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
1,2-Dichloroethane	ND	0.081	ug/L	20	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
Benzene	ND	0.064	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.126	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	5.900	0.107	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.092	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.134	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.091	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.082	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.091	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.124	0.075	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.099	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.082	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.170	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.135	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.153	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.092	ug/L	"	"	"	"	"	
Ethylbenzene	ND	0.087	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	ND	0.087	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.166	0.085	ug/L	"	"	"	"	"	
o-Xylene	ND	0.087	ug/L	"	"	"	"	"	
Bromoform	ND	0.206	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.137	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.098	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.098	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.098	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.120	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.103	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.120	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.120	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.148	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.213	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

91.2 %

75-125

"

"

"

"





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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG1-12' (7504002-06) Vapor    Sampled: 12-Apr-05    Received: 12-Apr-05</b>									
Dichlorodifluoromethane	ND	0.005	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Chloromethane</b>	0.002	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.007	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.015	0.006	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.076	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.008	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.006	0.003	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.004	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.004	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.004	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.038	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.005	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.004	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.008	0.003	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.006	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.858	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.005	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.007	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.004	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.017	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.004	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.009	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.008	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.020	0.004	ug/L	"	"	"	"	"	



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### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG1-12' (7504002-06) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
<b>m,p-Xylene</b>	0.036	0.004	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Styrene</b>	0.008	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.016	0.004	ug/L	"	"	"	"	"	
Bromoform	ND	0.010	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.005	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.005	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
<b>Hexachlorobutadiene</b>	ND	0.011	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		83.2 %	75-125		"	"	"	"	
<b>ASG2-12' (7504002-07) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
Dichlorodifluoromethane	ND	0.020	ug/L	4	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Chloromethane</b>	0.070	0.008	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.028	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.010	ug/L	"	"	"	"	"	
Bromomethane	ND	0.015	ug/L	"	"	"	"	"	
Chloroethane	ND	0.011	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.025	0.022	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.166	0.095	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.016	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.031	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.014	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.014	0.012	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.016	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.014	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.014	ug/L	"	"	"	"	"	
<b>1,1-Dichloroethane</b>	0.019	0.016	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.018	0.012	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.016	ug/L	"	"	"	"	"	
Chloroform	ND	0.019	ug/L	"	"	"	"	"	



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Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG2-12' (7504002-07) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
<b>1,1,1-Trichloroethane</b>	0.064	0.020	ug/L	4	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
1,2-Dichloroethane	ND	0.016	ug/L	"	"	"	"	"	
Benzene	ND	0.013	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.025	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.644	0.021	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.018	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.027	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.018	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.016	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.018	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.083	0.015	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.020	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.016	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.034	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	0.032	0.027	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.031	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.018	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.033	0.017	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.069	0.017	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.047	0.017	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.042	0.017	ug/L	"	"	"	"	"	
Bromoform	ND	0.041	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.027	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.020	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.020	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.020	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.021	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.043	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

90.4 %

75-125

"

"

"

"



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### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG2-5' (7504002-08) Vapor    Sampled: 12-Apr-05    Received: 12-Apr-05</b>									
Dichlorodifluoromethane	ND	0.049	ug/L	10	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Chloromethane</b>	ND	0.021	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.070	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.026	ug/L	"	"	"	"	"	
Bromomethane	ND	0.039	ug/L	"	"	"	"	"	
Chloroethane	ND	0.026	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.112	0.056	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.308	0.237	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.138	0.076	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.038	0.035	ug/L	"	"	"	"	"	
Carbon disulfide	ND	0.031	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.036	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.035	ug/L	"	"	"	"	"	
<b>1,1-Dichloroethane</b>	0.113	0.040	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.062	0.029	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
Chloroform	ND	0.049	ug/L	"	"	"	"	"	
<b>1,1,1-Trichloroethane</b>	0.307	0.050	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.040	ug/L	"	"	"	"	"	
Benzene	ND	0.032	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.063	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	3.003	0.054	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.046	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.067	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.045	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.041	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.045	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.139	0.038	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.050	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.041	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.085	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	0.081	0.068	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.077	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.046	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.048	0.043	ug/L	"	"	"	"	"	



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09-May-05

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### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG2-5' (7504002-08) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
<b>m,p-Xylene</b>	0.087	0.043	ug/L	10	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Styrene</b>	0.089	0.042	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.065	0.043	ug/L	"	"	"	"	"	
Bromoform	ND	0.103	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.068	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.049	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.049	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.049	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.052	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.074	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.106	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		88.0 %	75-125		"	"	"	"	
<b>ASG4-12' (7504002-09) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
Dichlorodifluoromethane	ND	0.005	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.007	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.003	ug/L	"	"	"	"	"	
Trichlorofluoromethane	ND	0.006	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.052	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.004	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.030	0.003	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.004	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.004	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.004	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.011	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.005	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	



Environ Corp  
2010 Main Street, Suite 900  
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Project: ENV041205-10  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
09-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG4-12' (7504002-09) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
1,2-Dichloroethane	ND	0.004	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Benzene</b>	0.015	0.003	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.006	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.086	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.005	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.007	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.004	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.021	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.004	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.009	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.008	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.008	0.004	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.013	0.004	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.011	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.011	0.004	ug/L	"	"	"	"	"	
Bromoform	ND	0.010	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.005	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.005	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		86.4 %	75-125		"	"	"	"	



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG3-5' (7504002-10) Vapor    Sampled: 12-Apr-05    Received: 12-Apr-05</b>									
Dichlorodifluoromethane	ND	0.005	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.007	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.003	ug/L	"	"	"	"	"	
Trichlorofluoromethane	ND	0.006	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.097	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.003	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.009	0.003	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.004	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.004	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.004	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.028	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.005	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.004	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.011	0.003	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.006	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.010	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.005	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.007	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.006	0.004	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.020	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.004	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.009	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.008	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.008	0.004	ug/L	"	"	"	"	"	



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09-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG3-5' (7504002-10) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
<b>m,p-Xylene</b>	0.014	0.004	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Styrene</b>	0.009	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.010	0.004	ug/L	"	"	"	"	"	
Bromoform	ND	0.010	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.005	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.005	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		88.0 %	75-125		"	"	"	"	
<b>ASG4-5' (7504002-11) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
Dichlorodifluoromethane	ND	0.005	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Chloromethane</b>	0.204	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.007	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.003	ug/L	"	"	"	"	"	
Trichlorofluoromethane	ND	0.006	ug/L	"	"	"	"	"	
<b>Acetone</b>	1.731	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.008	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.010	0.003	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.004	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.004	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.004	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.029	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.005	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	





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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG4-5' (7504002-11) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
1,2-Dichloroethane	ND	0.004	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
<b>Benzene</b>	0.017	0.003	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.006	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.008	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.005	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.007	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.006	0.004	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.017	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.004	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.009	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.008	ug/L	"	"	"	"	"	
<b>Chlorobenzene</b>	0.006	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.650	0.004	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	1.127	0.004	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.011	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.420	0.004	ug/L	"	"	"	"	"	
Bromoform	ND	0.010	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.020	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.006	0.005	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.343	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.005	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
<b>1,2-Dichlorobenzene</b>	0.007	0.006	ug/L	"	"	"	"	"	
<b>1,2,4-Trichlorobenzene</b>	0.118	0.007	ug/L	"	"	"	"	"	
<b>Hexachlorobutadiene</b>	0.013	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

89.6 %

75-125

"

"

"

"



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>TRIP BLANK (7504002-12) Vapor Sampled: 12-Apr-05 Received: 12-Apr-05</b>									
Dichlorodifluoromethane	ND	0.005	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.007	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.003	ug/L	"	"	"	"	"	
Trichlorofluoromethane	ND	0.006	ug/L	"	"	"	"	"	
Acetone	ND	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.008	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
Carbon disulfide	ND	0.003	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.004	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.004	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.004	ug/L	"	"	"	"	"	
2-Butanone	ND	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.005	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.004	ug/L	"	"	"	"	"	
Benzene	ND	0.003	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.006	ug/L	"	"	"	"	"	
Trichloroethene	ND	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.005	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.007	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.004	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.005	ug/L	"	"	"	"	"	
Toluene	ND	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.005	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.004	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.009	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.008	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
Ethylbenzene	ND	0.004	ug/L	"	"	"	"	"	
m,p-Xylene	ND	0.004	ug/L	"	"	"	"	"	



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>TRIP BLANK (7504002-12) Vapor    Sampled: 12-Apr-05    Received: 12-Apr-05</b>									
Styrene	ND	0.004	ug/L	1	7D51501	14-Apr-05	14-Apr-05	EPA TO-15	
o-Xylene	ND	0.004	ug/L	"	"	"	"	"	
Bromoform	ND	0.010	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.005	0.005	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.005	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		89.6 %	75-125		"	"	"	"	



Environ Corp  
2010 Main Street, Suite 900  
Irvine CA, 92614

Project: ENV041205-10  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
09-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15 - Quality Control

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7D51501 - TO-15

#### Blank (7D51501-BLK1)

Prepared & Analyzed: 14-Apr-05

Dichlorodifluoromethane	ND	0.002	ug/L
Chloromethane	ND	0.001	ug/L
Dichlorotetrafluoroethane	ND	0.003	ug/L
Vinyl chloride	ND	0.001	ug/L
Bromomethane	ND	0.002	ug/L
Chloroethane	ND	0.001	ug/L
Trichlorofluoromethane	ND	0.002	ug/L
Acetone	ND	0.017	ug/L
1,1-Dichloroethene	ND	0.001	ug/L
1,1,2-Trichlorotrifluoroethane	ND	0.003	ug/L
Methylene chloride	ND	0.002	ug/L
Carbon disulfide	ND	0.001	ug/L
trans-1,2-Dichloroethene	ND	0.002	ug/L
Methyl tert-butyl ether	ND	0.001	ug/L
Vinyl acetate	ND	0.001	ug/L
1,1-Dichloroethane	ND	0.001	ug/L
2-Butanone	ND	0.003	ug/L
cis-1,2-Dichloroethene	ND	0.002	ug/L
Chloroform	ND	0.001	ug/L
1,1,1-Trichloroethane	ND	0.001	ug/L
1,2-Dichloroethane	ND	0.001	ug/L
Benzene	ND	0.001	ug/L
Carbon tetrachloride	ND	0.003	ug/L
Trichloroethene	ND	0.005	ug/L
1,2-Dichloropropane	ND	0.002	ug/L
Bromodichloromethane	ND	0.002	ug/L
cis-1,3-Dichloropropene	ND	0.001	ug/L
4-Methyl-2-pentanone	ND	0.001	ug/L
trans-1,3-Dichloropropene	ND	0.001	ug/L
Toluene	ND	0.002	ug/L
1,1,2-Trichloroethane	ND	0.002	ug/L
2-Hexanone	ND	0.002	ug/L
Dibromochloromethane	ND	0.003	ug/L
Tetrachloroethene	ND	0.003	ug/L



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## Volatile Organic Compounds in Air by EPA Method TO-15 - Quality Control

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7D51501 - TO-15

#### Blank (7D51501-BLK1)

Prepared & Analyzed: 14-Apr-05

1,2-Dibromoethane (EDB)	ND	0.002	ug/L							
Chlorobenzene	ND	0.002	ug/L							
Ethylbenzene	ND	0.002	ug/L							
m,p-Xylene	ND	0.002	ug/L							
Styrene	0.004	0.003	ug/L							B
o-Xylene	ND	0.002	ug/L							
Bromoform	ND	0.005	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.005	ug/L							
4-Ethyltoluene	ND	0.003	ug/L							
1,3,5-Trimethylbenzene	ND	0.002	ug/L							
1,2,4-Trimethylbenzene	ND	0.003	ug/L							
1,3-Dichlorobenzene	ND	0.006	ug/L							
Benzyl chloride	ND	0.002	ug/L							
1,4-Dichlorobenzene	ND	0.006	ug/L							
1,2-Dichlorobenzene	ND	0.006	ug/L							
1,2,4-Trichlorobenzene	ND	0.007	ug/L							
Hexachlorobutadiene	ND	0.007	ug/L							

Surrogate: 4-Bromofluorobenzene 110 125 88.0 75-125



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### Notes and Definitions

B Analyte is found in the associated blank as well as in the sample (CLP B-flag).

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference



May 23, 2005

Ms. Maria Szweminska  
Environ Corp  
2010 Main Street  
Suite 900  
Irvine, CA 92614

**SUBJECT: DATA REPORT – WYLE LABS – 1841 HILLSIDE AVENUE –  
NORCO, CA - ENVIRON PROJECT #04-8099P**

H&P Project # ENV052005-12 & ENV052005-14

Ms. Szweminska:

Please find enclosed a data report for the above referenced location. Vapor samples were analyzed in H&P mobile laboratories.

### **Project Summary**

The following analyses were conducted:

- 20 vapors for volatile organic compounds by EPA Method TO-15

The samples were received in appropriate containers with appropriate labels, seals, and chain-of-custody documentation.

### **Project Narrative**

The results for all analyses and required QA/QC analyses are summarized in the enclosed tables. All calibrations, blanks, surrogates, and spike recoveries fulfill quality control criteria.

H&P Mobile GeoChemistry appreciates the opportunity to provide analytical services to Environ Corp on this project. If you have any questions relating to this data or report, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink that reads 'Blayne Hartman'.

Dr. Blayne Hartman



Environ Corp  
2010 Main Street, Suite 900  
Irvine CA, 92614

Project: ENV052005-12  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
23-May-05

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ASG16-5	7505007-01	Vapor	19-May-05	20-May-05
ASG15-5	7505007-02	Vapor	19-May-05	20-May-05
ASG15-10	7505007-03	Vapor	19-May-05	20-May-05
ASG14-5	7505007-04	Vapor	19-May-05	20-May-05
ASG11-5	7505007-05	Vapor	19-May-05	20-May-05
ASG11-10	7505007-06	Vapor	19-May-05	20-May-05
ASG12-5	7505007-07	Vapor	19-May-05	20-May-05
ASG12-10	7505007-08	Vapor	19-May-05	20-May-05
ASG8-10	7505008-01	Vapor	20-May-05	20-May-05
ASG8-5	7505008-02	Vapor	20-May-05	20-May-05
ASG9-10	7505008-03	Vapor	20-May-05	20-May-05
ASG9-5	7505008-04	Vapor	20-May-05	20-May-05
ASG10-5	7505008-05	Vapor	20-May-05	20-May-05
ASG17-5	7505008-06	Vapor	20-May-05	20-May-05
ASG18-5	7505008-07	Vapor	20-May-05	20-May-05
ASG17-10	7505008-08	Vapor	20-May-05	20-May-05
ASG19-5	7505008-09	Vapor	20-May-05	20-May-05
ASG13-10	7505008-10	Vapor	20-May-05	20-May-05
ASG13-5	7505008-11	Vapor	20-May-05	20-May-05
TRIP BLANK	7505008-12	Vapor	20-May-05	20-May-05





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Project: ENV052005-12  
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Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG16-5 (7505007-01) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
Trichlorofluoromethane	ND	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.190	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.004	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.065	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.002	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.015	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
Trichloroethene	ND	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.006	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.056	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.018	0.002	ug/L	"	"	"	"	"	



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Project: ENV052005-12  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG16-5 (7505007-01) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
<b>m,p-Xylene</b>	0.048	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
Styrene	ND	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.029	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.008	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.007	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.030	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		92.8 %	75-125		"	"	"	"	
<b>ASG15-5 (7505007-02) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.002	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.017	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.069	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.008	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.017	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.047	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.002	ug/L	"	"	"	"	"	



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Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG15-5 (7505007-02) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
1,1,1-Trichloroethane	ND	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.035	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.028	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.005	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.075	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.034	0.002	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.078	0.002	ug/L	"	"	"	"	"	
Styrene	ND	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.048	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.008	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.006	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.026	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

93.3 %

75-125

"

"

"

"



Environ Corp  
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Project: ENV052005-12  
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Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG15-10 (7505007-03) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.003	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.078	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.018	0.004	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.035	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.003	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.035	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.002	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.010	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.010	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.033	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.008	0.002	ug/L	"	"	"	"	"	



Environ Corp  
2010 Main Street, Suite 900  
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Project: ENV052005-12  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG15-10 (7505007-03) Vapor</b> <b>Sampled: 19-May-05</b> <b>Received: 20-May-05</b>									
<b>m,p-Xylene</b>	0.017	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
Styrene	ND	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.011	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.005	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.011	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene      94.6 %      75-125      "      "      "      "

### ASG14-5 (7505007-04) Vapor    **Sampled: 19-May-05**    **Received: 20-May-05**

<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.013	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.545	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.005	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.081	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.165	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.005	0.002	ug/L	"	"	"	"	"	



Environ Corp  
2010 Main Street, Suite 900  
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Project: ENV052005-12  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG14-5 (7505007-04) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
1,1,1-Trichloroethane	ND	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.048	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.020	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.011	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.053	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	0.156	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.019	0.002	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.032	0.002	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.007	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.020	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.005	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.005	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.021	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

93.4 %

75-125

"

"

"

"



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG11-5 (7505007-05) Vapor    Sampled: 19-May-05    Received: 20-May-05</b>									
<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.002	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.044	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.088	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.025	0.004	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.005	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.021	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.029	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.002	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.041	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.182	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.004	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.026	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.008	0.002	ug/L	"	"	"	"	"	



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG11-5 (7505007-05) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
<b>m,p-Xylene</b>	0.014	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Styrene</b>	0.005	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.010	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.003	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.014	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		93.8 %	75-125		"	"	"	"	
<b>ASG11-10 (7505007-06) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
Dichlorodifluoromethane	ND	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.005	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
<b>Chloroethane</b>	0.002	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.005	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.285	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.007	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.082	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.002	ug/L	"	"	"	"	"	





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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG11-10 (7505007-06) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
1,1,1-Trichloroethane	ND	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.045	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.034	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.007	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.041	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.012	0.002	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.027	0.002	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.004	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.019	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.007	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.006	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.026	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

93.1 %

75-125

"

"

"

"



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG12-5 (7505007-07) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
Dichlorodifluoromethane	ND	0.012	ug/L	5	7E52001	20-May-05	20-May-05	EPA TO-15	
Chloromethane	ND	0.010	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.017	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.013	ug/L	"	"	"	"	"	
Bromomethane	ND	0.019	ug/L	"	"	"	"	"	
Chloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.163	0.014	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.126	0.119	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.010	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.130	0.019	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.049	0.017	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.020	0.008	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.010	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.009	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.009	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.010	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.028	0.015	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.015	0.012	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.012	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.010	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.011	0.008	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.016	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	1.448	0.027	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.012	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.017	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.011	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.015	0.010	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.011	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.045	0.019	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.012	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.010	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.021	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.034	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.019	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.023	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.022	0.011	ug/L	"	"	"	"	"	



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG12-5 (7505007-07) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
<b>m,p-Xylene</b>	0.043	0.011	ug/L	5	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Styrene</b>	0.032	0.021	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.026	0.011	ug/L	"	"	"	"	"	
Bromoform	ND	0.026	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.034	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.025	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.012	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.025	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.013	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.037	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.053	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		94.9 %	75-125		"	"	"	"	
<b>ASG12-10 (7505007-08) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
<b>Dichlorodifluoromethane</b>	0.006	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.019	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
<b>Chloroethane</b>	0.006	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.404	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	2.134	0.024	ug/L	"	"	"	"	"	E
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.145	0.004	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.006	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.065	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.647	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.049	0.002	ug/L	"	"	"	"	"	



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Project: ENV052005-12  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG12-10 (7505007-08) Vapor Sampled: 19-May-05 Received: 20-May-05</b>									
1,1,1-Trichloroethane	ND	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.223	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	5.363	0.005	ug/L	"	"	"	"	"	E
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.049	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.105	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	0.013	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.126	0.002	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.277	0.002	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.014	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.165	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.013	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.010	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.047	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

95.5 %

75-125

"

"

"

"



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG8-10 (7505008-01) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
Dichlorodifluoromethane	ND	0.123	ug/L	50	7E52301	23-May-05	23-May-05	EPA TO-15	
Chloromethane	ND	0.103	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.174	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.128	ug/L	"	"	"	"	"	
Bromomethane	ND	0.194	ug/L	"	"	"	"	"	
Chloroethane	ND	0.066	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	1.458	0.140	ug/L	"	"	"	"	"	
Acetone	ND	1.186	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.099	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.467	0.191	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.173	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.137	0.078	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.099	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.090	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.088	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.101	ug/L	"	"	"	"	"	
2-Butanone	ND	0.147	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.198	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.234	0.122	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.124	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.101	ug/L	"	"	"	"	"	
Benzene	ND	0.080	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.157	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	43.979	0.268	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.115	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.167	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.113	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.102	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.113	ug/L	"	"	"	"	"	
Toluene	ND	0.188	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.124	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.102	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.213	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.338	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.192	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.230	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.121	0.108	ug/L	"	"	"	"	"	



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG8-10 (7505008-01) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
<b>m,p-Xylene</b>	0.186	0.108	ug/L	50	7E52301	23-May-05	23-May-05	EPA TO-15	
<b>Styrene</b>	0.221	0.212	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.121	0.108	ug/L	"	"	"	"	"	
Bromoform	ND	0.258	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.342	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.245	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.123	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.245	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.300	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.129	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.300	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.300	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.370	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.532	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 96.2 % 75-125 " " " "

### ASG8-5 (7505008-02) Vapor Sampled: 20-May-05 Received: 20-May-05

Dichlorodifluoromethane	ND	0.025	ug/L	10	7E52301	23-May-05	23-May-05	EPA TO-15	
Chloromethane	ND	0.021	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.035	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.026	ug/L	"	"	"	"	"	
Bromomethane	ND	0.039	ug/L	"	"	"	"	"	
Chloroethane	ND	0.013	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.342	0.028	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.498	0.237	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.168	0.038	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.049	0.035	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.103	0.016	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.018	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.018	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.074	0.029	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.063	0.024	ug/L	"	"	"	"	"	



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG8-5 (7505008-02) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
1,1,1-Trichloroethane	ND	0.025	ug/L	10	7E52301	23-May-05	23-May-05	EPA TO-15	
1,2-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.051	0.016	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.031	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	11.799	0.054	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.023	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.033	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.020	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.117	0.038	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.025	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.020	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.043	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	3.181	0.068	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.038	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.046	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.117	0.022	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.295	0.022	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.051	0.042	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.165	0.022	ug/L	"	"	"	"	"	
Bromoform	ND	0.052	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.068	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.049	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.025	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.049	0.049	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.026	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.074	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.106	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

94.2 %

75-125

"

"

"

"



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG9-10 (7505008-03) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
Dichlorodifluoromethane	ND	0.010	ug/L	4	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.058	0.008	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.014	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.010	ug/L	"	"	"	"	"	
<b>Bromomethane</b>	0.132	0.015	ug/L	"	"	"	"	"	
Chloroethane	ND	0.005	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.953	0.011	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.783	0.095	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.008	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.459	0.015	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.121	0.014	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.068	0.006	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.008	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.007	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.007	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.150	0.012	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.016	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.048	0.010	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.010	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.096	0.006	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.013	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	17.699	0.107	ug/L	20	"	"	"	"	
1,2-Dichloropropane	ND	0.009	ug/L	4	"	"	"	"	
Bromodichloromethane	ND	0.013	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.009	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.025	0.008	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.009	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.376	0.015	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.010	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.008	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.017	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	2.098	0.027	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.015	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.018	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.087	0.009	ug/L	"	"	"	"	"	





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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG9-10 (7505008-03) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
<b>m,p-Xylene</b>	0.147	0.009	ug/L	4	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Styrene</b>	0.047	0.017	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.100	0.009	ug/L	"	"	"	"	"	
Bromoform	ND	0.021	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.027	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.044	0.020	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.027	0.010	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.540	0.020	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
<b>Benzyl chloride</b>	0.038	0.010	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.043	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		94.2 %	75-125		"	"	"	"	
<b>ASG9-5 (7505008-04) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
<b>Dichlorodifluoromethane</b>	0.003	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.079	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.040	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.018	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.056	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.014	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.008	0.002	ug/L	"	"	"	"	"	



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Project: ENV052005-12  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG9-5 (7505008-04) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
1,1,1-Trichloroethane	ND	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.018	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	1.609	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.018	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	0.049	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.005	0.002	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.012	0.002	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.005	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.007	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.002	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.010	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

92.5 %

75-125

"

"

"

"



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG10-5 (7505008-05) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
Dichlorodifluoromethane	ND	0.012	ug/L	5	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.062	0.010	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.017	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.013	ug/L	"	"	"	"	"	
<b>Bromomethane</b>	0.136	0.019	ug/L	"	"	"	"	"	
<b>Chloroethane</b>	0.007	0.007	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.019	0.014	ug/L	"	"	"	"	"	
<b>Acetone</b>	3.083	0.119	ug/L	"	"	"	"	"	E
1,1-Dichloroethene	ND	0.010	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.291	0.019	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.090	0.017	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.100	0.008	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.010	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.009	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.009	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.010	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.412	0.015	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.016	0.012	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.012	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.010	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.102	0.008	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.016	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.590	0.027	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.012	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.017	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.011	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.038	0.010	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.011	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.376	0.019	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.012	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.010	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.021	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	1.827	0.034	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.019	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.023	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.953	0.011	ug/L	"	"	"	"	"	



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG10-5 (7505008-05) Vapor    Sampled: 20-May-05    Received: 20-May-05</b>									
<b>m,p-Xylene</b>	1.950	0.011	ug/L	5	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Styrene</b>	0.055	0.021	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.867	0.011	ug/L	"	"	"	"	"	
Bromoform	ND	0.026	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.034	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.043	0.025	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.028	0.012	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.461	0.025	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
<b>Benzyl chloride</b>	0.041	0.013	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.037	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.053	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		93.4 %	75-125	"	"	"	"	"	
<b>ASG17-5 (7505008-06) Vapor    Sampled: 20-May-05    Received: 20-May-05</b>									
Dichlorodifluoromethane	ND	0.010	ug/L	4	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.107	0.008	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.014	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.010	ug/L	"	"	"	"	"	
<b>Bromomethane</b>	0.201	0.015	ug/L	"	"	"	"	"	
<b>Chloroethane</b>	0.008	0.005	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.179	0.011	ug/L	"	"	"	"	"	
<b>Acetone</b>	1.399	0.095	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.008	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.245	0.015	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.094	0.014	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.121	0.006	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.008	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.007	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.007	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.471	0.012	ug/L	"	"	"	"	"	
<b>cis-1,2-Dichloroethene</b>	0.026	0.016	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.029	0.010	ug/L	"	"	"	"	"	



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG17-5 (7505008-06) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
1,1,1-Trichloroethane	ND	0.010	ug/L	4	7E52001	20-May-05	20-May-05	EPA TO-15	
1,2-Dichloroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.102	0.006	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.013	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	3.432	0.021	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.009	ug/L	"	"	"	"	"	
<b>Bromodichloromethane</b>	0.018	0.013	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.009	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.036	0.008	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.009	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.346	0.015	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.010	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.008	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.017	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	1.692	0.027	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.015	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.018	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.078	0.009	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.186	0.009	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.051	0.017	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.130	0.009	ug/L	"	"	"	"	"	
Bromoform	ND	0.021	ug/L	"	"	"	"	"	
1,1,1,2,2-Tetrachloroethane	ND	0.027	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.049	0.020	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.049	0.010	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.353	0.020	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
<b>Benzyl chloride</b>	0.057	0.010	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.043	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		94.6 %	75-125		"	"	"	"	



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG18-5 (7505008-07) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.003	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.004	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.688	0.024	ug/L	"	"	"	"	"	E
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	ND	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.012	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.221	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.002	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.030	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.052	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.013	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.120	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	0.024	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.299	0.002	ug/L	"	"	"	"	"	



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG18-5 (7505008-07) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
<b>m,p-Xylene</b>	0.607	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Styrene</b>	0.004	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.477	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.009	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.007	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.036	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 96.2 % 75-125 " " " "

### ASG17-10 (7505008-08) Vapor Sampled: 20-May-05 Received: 20-May-05

<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.002	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
Trichlorofluoromethane	ND	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.038	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
Carbon disulfide	ND	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.006	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.002	ug/L	"	"	"	"	"	



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Project: ENV052005-12  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG17-10 (7505008-08) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
1,1,1-Trichloroethane	ND	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.007	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.027	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.031	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.034	0.002	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.095	0.002	ug/L	"	"	"	"	"	
Styrene	ND	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.056	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.007	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.006	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.029	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

93.0 %

75-125

"

"

"

"





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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG19-5 (7505008-09) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
Dichlorodifluoromethane	ND	0.025	ug/L	10	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Chloromethane</b>	0.058	0.021	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.035	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.026	ug/L	"	"	"	"	"	
<b>Bromomethane</b>	0.147	0.039	ug/L	"	"	"	"	"	
Chloroethane	ND	0.013	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.090	0.028	ug/L	"	"	"	"	"	
<b>Acetone</b>	2.371	0.237	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.153	0.038	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.062	0.035	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.131	0.016	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.018	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.018	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.589	0.029	ug/L	"	"	"	"	"	
<b>cis-1,2-Dichloroethene</b>	ND	0.040	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.058	0.024	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.025	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.070	0.016	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.031	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	5.900	0.054	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.023	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.033	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.070	0.020	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.222	0.038	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.025	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.020	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.043	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	1.353	0.068	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.038	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.046	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	1.473	0.022	ug/L	"	"	"	"	"	



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG19-5 (7505008-09) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
<b>m,p-Xylene</b>	3.553	0.022	ug/L	10	7E52001	20-May-05	20-May-05	EPA TO-15	
<b>Styrene</b>	0.076	0.042	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	1.907	0.022	ug/L	"	"	"	"	"	
Bromoform	ND	0.052	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.068	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.049	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.047	0.025	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.157	0.049	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
<b>Benzyl chloride</b>	0.067	0.026	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.074	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.106	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 92.3 % 75-125 " " " "

### ASG13-10 (7505008-10) Vapor Sampled: 20-May-05 Received: 20-May-05

Dichlorodifluoromethane	ND	0.123	ug/L	50	7E52301	23-May-05	23-May-05	EPA TO-15	
Chloromethane	ND	0.103	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.174	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.128	ug/L	"	"	"	"	"	
Bromomethane	ND	0.194	ug/L	"	"	"	"	"	
Chloroethane	ND	0.066	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	2.299	0.140	ug/L	"	"	"	"	"	
Acetone	ND	1.186	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.099	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.918	0.191	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.173	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.187	0.078	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.099	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.090	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.088	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.101	ug/L	"	"	"	"	"	
2-Butanone	ND	0.147	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.198	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.190	0.122	ug/L	"	"	"	"	"	



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG13-10 (7505008-10) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
1,1,1-Trichloroethane	ND	0.124	ug/L	50	7E52301	23-May-05	23-May-05	EPA TO-15	
1,2-Dichloroethane	ND	0.101	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.102	0.080	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.157	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	40.761	0.268	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.115	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.167	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.113	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.102	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.113	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.188	0.188	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.124	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.102	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.213	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.338	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.192	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.230	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.130	0.108	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	0.195	0.108	ug/L	"	"	"	"	"	
Styrene	ND	0.212	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.139	0.108	ug/L	"	"	"	"	"	
Bromoform	ND	0.258	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.342	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.245	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.123	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.245	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.300	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.129	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.300	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.300	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.370	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.532	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		94.7 %		75-125	"	"	"	"	



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG13-5 (7505008-11) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
<b>Dichlorodifluoromethane</b>	0.037	0.025	ug/L	10	7E52301	23-May-05	23-May-05	EPA TO-15	
<b>Chloromethane</b>	0.029	0.021	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.035	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.026	ug/L	"	"	"	"	"	
Bromomethane	ND	0.039	ug/L	"	"	"	"	"	
Chloroethane	ND	0.013	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.465	0.028	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.711	0.237	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	1.683	0.038	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.319	0.035	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.087	0.016	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.018	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.018	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.182	0.029	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.044	0.024	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.025	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.172	0.016	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.031	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	11.263	0.054	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.023	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.033	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
<b>4-Methyl-2-pentanone</b>	0.025	0.020	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.865	0.038	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.025	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.020	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.043	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	0.508	0.068	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.038	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.046	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.290	0.022	ug/L	"	"	"	"	"	



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG13-5 (7505008-11) Vapor Sampled: 20-May-05 Received: 20-May-05</b>									
<b>m,p-Xylene</b>	0.737	0.022	ug/L	10	7E52301	23-May-05	23-May-05	EPA TO-15	
<b>Styrene</b>	0.068	0.042	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.403	0.022	ug/L	"	"	"	"	"	
Bromoform	ND	0.052	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.068	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.049	0.049	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.045	0.025	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.186	0.049	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.026	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.074	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.106	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 96.2 % 75-125 " " " "

### TRIP BLANK (7505008-12) Vapor Sampled: 20-May-05 Received: 20-May-05

Dichlorodifluoromethane	ND	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
Trichlorofluoromethane	ND	0.003	ug/L	"	"	"	"	"	
Acetone	ND	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
Carbon disulfide	ND	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Butanone	ND	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.002	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	



Environ Corp  
2010 Main Street, Suite 900  
Irvine CA, 92614

Project: ENV052005-12  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>TRIP BLANK (7505008-12) Vapor    Sampled: 20-May-05    Received: 20-May-05</b>									
1,2-Dichloroethane	ND	0.002	ug/L	1	7E52001	20-May-05	20-May-05	EPA TO-15	
Benzene	ND	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
Trichloroethene	ND	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
Toluene	ND	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
Ethylbenzene	ND	0.002	ug/L	"	"	"	"	"	
m,p-Xylene	ND	0.002	ug/L	"	"	"	"	"	
Styrene	ND	0.004	ug/L	"	"	"	"	"	
o-Xylene	ND	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.005	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.002	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		95.5 %	75-125		"	"	"	"	



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Reported:  
23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15 - Quality Control

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7E52001 - TO-15

#### Blank (7E52001-BLK2)

Prepared & Analyzed: 20-May-05

Dichlorodifluoromethane	ND	0.002	ug/L
Chloromethane	ND	0.002	ug/L
Dichlorotetrafluoroethane	ND	0.003	ug/L
Vinyl chloride	ND	0.003	ug/L
Bromomethane	ND	0.004	ug/L
Chloroethane	ND	0.001	ug/L
Trichlorofluoromethane	ND	0.003	ug/L
Acetone	ND	0.024	ug/L
1,1-Dichloroethene	ND	0.002	ug/L
1,1,2-Trichlorotrifluoroethane	ND	0.004	ug/L
Methylene chloride	ND	0.003	ug/L
Carbon disulfide	ND	0.002	ug/L
trans-1,2-Dichloroethene	ND	0.002	ug/L
Methyl tert-butyl ether	ND	0.002	ug/L
Vinyl acetate	ND	0.002	ug/L
1,1-Dichloroethane	ND	0.002	ug/L
2-Butanone	ND	0.003	ug/L
cis-1,2-Dichloroethene	ND	0.004	ug/L
Chloroform	ND	0.002	ug/L
1,1,1-Trichloroethane	ND	0.002	ug/L
1,2-Dichloroethane	ND	0.002	ug/L
Benzene	ND	0.002	ug/L
Carbon tetrachloride	ND	0.003	ug/L
Trichloroethene	ND	0.005	ug/L
1,2-Dichloropropane	ND	0.002	ug/L
Bromodichloromethane	ND	0.003	ug/L
cis-1,3-Dichloropropene	ND	0.002	ug/L
4-Methyl-2-pentanone	ND	0.002	ug/L
trans-1,3-Dichloropropene	ND	0.002	ug/L
Toluene	ND	0.004	ug/L
1,1,2-Trichloroethane	ND	0.002	ug/L
2-Hexanone	ND	0.002	ug/L
Dibromochloromethane	ND	0.004	ug/L
Tetrachloroethene	ND	0.007	ug/L



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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15 - Quality Control

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7E52001 - TO-15

##### Blank (7E52001-BLK2)

Prepared & Analyzed: 20-May-05

1,2-Dibromoethane (EDB)	ND	0.004	ug/L
Chlorobenzene	ND	0.005	ug/L
Ethylbenzene	ND	0.002	ug/L
m,p-Xylene	ND	0.002	ug/L
Styrene	ND	0.004	ug/L
o-Xylene	ND	0.002	ug/L
Bromoform	ND	0.005	ug/L
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L
4-Ethyltoluene	ND	0.005	ug/L
1,3,5-Trimethylbenzene	ND	0.002	ug/L
1,2,4-Trimethylbenzene	ND	0.005	ug/L
1,3-Dichlorobenzene	ND	0.006	ug/L
Benzyl chloride	ND	0.003	ug/L
1,4-Dichlorobenzene	ND	0.006	ug/L
1,2-Dichlorobenzene	ND	0.006	ug/L
1,2,4-Trichlorobenzene	ND	0.007	ug/L
Hexachlorobutadiene	ND	0.011	ug/L

Surrogate: 4-Bromofluorobenzene	59.6	62.5	95.4	75-125
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#### Batch 7E52301 - TO-15

##### Blank (7E52301-BLK1)

Prepared & Analyzed: 23-May-05

Dichlorodifluoromethane	ND	0.002	ug/L
Chloromethane	ND	0.002	ug/L
Dichlorotetrafluoroethane	ND	0.003	ug/L
Vinyl chloride	ND	0.003	ug/L
Bromomethane	ND	0.004	ug/L
Chloroethane	ND	0.001	ug/L
Trichlorofluoromethane	ND	0.003	ug/L
Acetone	ND	0.024	ug/L
1,1-Dichloroethene	ND	0.002	ug/L
1,1,2-Trichlorotrifluoroethane	ND	0.004	ug/L
Methylene chloride	ND	0.003	ug/L





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23-May-05

## Volatile Organic Compounds in Air by EPA Method TO-15 - Quality Control

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7E52301 - TO-15

#### Blank (7E52301-BLK1)

Prepared & Analyzed: 23-May-05

Carbon disulfide	ND	0.002	ug/L
trans-1,2-Dichloroethene	ND	0.002	ug/L
Methyl tert-butyl ether	ND	0.002	ug/L
Vinyl acetate	ND	0.002	ug/L
1,1-Dichloroethane	ND	0.002	ug/L
2-Butanone	ND	0.003	ug/L
cis-1,2-Dichloroethene	ND	0.004	ug/L
Chloroform	ND	0.002	ug/L
1,1,1-Trichloroethane	ND	0.002	ug/L
1,2-Dichloroethane	ND	0.002	ug/L
Benzene	ND	0.002	ug/L
Carbon tetrachloride	ND	0.003	ug/L
Trichloroethene	ND	0.005	ug/L
1,2-Dichloropropane	ND	0.002	ug/L
Bromodichloromethane	ND	0.003	ug/L
cis-1,3-Dichloropropene	ND	0.002	ug/L
4-Methyl-2-pentanone	ND	0.002	ug/L
trans-1,3-Dichloropropene	ND	0.002	ug/L
Toluene	ND	0.004	ug/L
1,1,2-Trichloroethane	ND	0.002	ug/L
2-Hexanone	ND	0.002	ug/L
Dibromochloromethane	ND	0.004	ug/L
Tetrachloroethene	ND	0.007	ug/L
1,2-Dibromoethane (EDB)	ND	0.004	ug/L
Chlorobenzene	ND	0.005	ug/L
Ethylbenzene	ND	0.002	ug/L
m,p-Xylene	ND	0.002	ug/L
Styrene	ND	0.004	ug/L
o-Xylene	ND	0.002	ug/L
Bromoform	ND	0.005	ug/L
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L
4-Ethyltoluene	ND	0.005	ug/L
1,3,5-Trimethylbenzene	ND	0.002	ug/L
1,2,4-Trimethylbenzene	ND	0.005	ug/L



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Reported:  
23-May-05

**Volatile Organic Compounds in Air by EPA Method TO-15 - Quality Control**  
**H & P Mobile Geochemistry Lab 7**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 7E52301 - TO-15**

**Blank (7E52301-BLK1)**

Prepared & Analyzed: 23-May-05

1,3-Dichlorobenzene	ND	0.006	ug/L
Benzyl chloride	ND	0.003	ug/L
1,4-Dichlorobenzene	ND	0.006	ug/L
1,2-Dichlorobenzene	ND	0.006	ug/L
1,2,4-Trichlorobenzene	ND	0.007	ug/L
Hexachlorobutadiene	ND	0.011	ug/L

<i>Surrogate: 4-Bromofluorobenzene</i>	<i>59.9</i>			<i>62.5</i>		<i>95.8</i>	<i>75-125</i>
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Environ Corp

2010 Main Street, Suite 900

Irvine CA, 92614

Project: ENV052005-12

Project Number: 04-8099P

Project Manager: Ms. Maria Szweminska

Reported:

23-May-05

### Notes and Definitions

E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



June 13, 2005

Ms. Maria Szweminska  
Environ Corp  
2010 Main Street  
Suite 900  
Irvine, CA 92614

**SUBJECT: DATA REPORT – RESIDENCE – 975 THIRD STREET - NORCO -  
ENVIRON PROJECT #04-8099P**

H&P Project # ENV060805-10

Ms. Szweminska:

Please find enclosed a data report for the above referenced location. Vapor samples were analyzed in H&P mobile laboratories.

### **Project Summary**

The following analyses were conducted:

- 8 vapors for volatile organic compounds by EPA Method TO-15

The samples were received in appropriate containers with appropriate labels, seals, and chain-of-custody documentation.

### **Project Narrative**

The results for all analyses and required QA/QC analyses are summarized in the enclosed tables. All calibrations, blanks, surrogates, and spike recoveries fulfill quality control criteria. No data qualifiers (flags) apply to any of the reported data.

H&P Mobile GeoChemistry appreciates the opportunity to provide analytical services to Environ Corp on this project. If you have any questions relating to this data or report, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink that reads 'Blayne Hartman'.

Dr. Blayne Hartman



Environ Corp  
2010 Main Street, Suite 900  
Irvine CA, 92614

Project: ENV060805-10  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
13-Jun-05

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
ASG-5-5	7506002-01	Vapor	07-Jun-05	07-Jun-05
ASG-5-10	7506002-02	Vapor	07-Jun-05	07-Jun-05
ASG-6-5	7506002-03	Vapor	07-Jun-05	07-Jun-05
ASG-6-10	7506002-04	Vapor	07-Jun-05	07-Jun-05
ASG-6-10 DUP	7506002-05	Vapor	07-Jun-05	07-Jun-05
ASG-7-5	7506002-06	Vapor	07-Jun-05	07-Jun-05
ASG-7-10	7506002-07	Vapor	07-Jun-05	07-Jun-05
TRIP BLANK	7506002-08	Vapor	07-Jun-05	07-Jun-05



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Project: ENV060805-10  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-5-5 (7506002-01) Vapor    Sampled: 07-Jun-05    Received: 07-Jun-05</b>									
<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.409	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.114	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.099	0.004	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.003	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.011	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.028	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.010	0.002	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.023	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	2.843	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.293	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.780	0.002	ug/L	"	"	"	"	"	



Environ Corp  
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Project: ENV060805-10  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-5-5 (7506002-01) Vapor</b> <b>Sampled: 07-Jun-05</b> <b>Received: 07-Jun-05</b>									
<b>m,p-Xylene</b>	1.213	0.002	ug/L	1	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
<b>Styrene</b>	0.011	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.520	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.024	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.054	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.083	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i> <i>119 %</i> <i>75-125</i> <i>"</i> <i>"</i> <i>"</i> <i>"</i>									
<b>ASG-5-10 (7506002-02) Vapor</b> <b>Sampled: 07-Jun-05</b> <b>Received: 07-Jun-05</b>									
Dichlorodifluoromethane	ND	0.010	ug/L	4	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
Chloromethane	ND	0.008	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.014	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.010	ug/L	"	"	"	"	"	
Bromomethane	ND	0.015	ug/L	"	"	"	"	"	
Chloroethane	ND	0.005	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.673	0.011	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.285	0.095	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.008	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.237	0.015	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.026	0.014	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.026	0.006	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.008	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.007	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.007	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.035	0.012	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.016	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.010	0.010	ug/L	"	"	"	"	"	



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Project: ENV060805-10  
Project Number: 04-8099P  
Project Manager: Ms. Maria Szweminska

Reported:  
13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-5-10 (7506002-02) Vapor Sampled: 07-Jun-05 Received: 07-Jun-05</b>									
1,1,1-Trichloroethane	ND	0.010	ug/L	4	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
1,2-Dichloroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.035	0.006	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.013	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	6.436	0.021	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.009	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.013	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.009	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.008	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.009	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.350	0.015	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.010	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.008	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.017	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.027	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.015	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.018	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	2.643	0.009	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	3.987	0.009	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.051	0.017	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	1.257	0.009	ug/L	"	"	"	"	"	
<b>Bromoform</b>	0.124	0.021	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.027	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.026	0.020	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.054	0.010	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.098	0.020	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.010	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.043	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

110 %

75-125

"

"

"

"





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13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-6-5 (7506002-03) Vapor    Sampled: 07-Jun-05    Received: 07-Jun-05</b>									
<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.163	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.126	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.042	0.004	ug/L	"	"	"	"	"	
<b>Methylene chloride</b>	0.004	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.014	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.024	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.010	0.002	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.019	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.858	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.192	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.563	0.002	ug/L	"	"	"	"	"	



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13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-6-5 (7506002-03) Vapor Sampled: 07-Jun-05 Received: 07-Jun-05</b>									
<b>m,p-Xylene</b>	1.083	0.002	ug/L	1	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
<b>Styrene</b>	0.013	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.420	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.030	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.059	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.118	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		99.5 %	75-125		"	"	"	"	
<b>ASG-6-10 (7506002-04) Vapor Sampled: 07-Jun-05 Received: 07-Jun-05</b>									
Dichlorodifluoromethane	ND	0.025	ug/L	10	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
Chloromethane	ND	0.021	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.035	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.026	ug/L	"	"	"	"	"	
Bromomethane	ND	0.039	ug/L	"	"	"	"	"	
Chloroethane	ND	0.013	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	3.141	0.028	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.237	0.237	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	1.224	0.038	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.035	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.022	0.016	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.018	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.018	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.032	0.029	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.037	0.024	ug/L	"	"	"	"	"	



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13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-6-10 (7506002-04) Vapor Sampled: 07-Jun-05 Received: 07-Jun-05</b>									
1,1,1-Trichloroethane	ND	0.025	ug/L	10	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
1,2-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.024	0.016	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.031	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	25.207	0.054	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.023	ug/L	"	"	"	"	"	
<b>Bromodichloromethane</b>	0.194	0.033	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.020	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.241	0.038	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.025	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.020	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.043	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.068	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.038	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.046	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	2.253	0.022	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	3.510	0.022	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.068	0.042	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	1.083	0.022	ug/L	"	"	"	"	"	
<b>Bromoform</b>	0.069	0.052	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.068	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.049	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.036	0.025	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.069	0.049	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.026	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.074	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.106	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

94.7 %

75-125

"

"

"

"



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-6-10 DUP (7506002-05) Vapor Sampled: 07-Jun-05 Received: 07-Jun-05</b>									
Dichlorodifluoromethane	ND	0.025	ug/L	10	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
Chloromethane	ND	0.021	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.035	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.026	ug/L	"	"	"	"	"	
Bromomethane	ND	0.039	ug/L	"	"	"	"	"	
Chloroethane	ND	0.013	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	2.916	0.028	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.261	0.237	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	1.147	0.038	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.035	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	ND	0.016	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.020	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.018	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.018	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.041	0.029	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.040	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.043	0.024	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.025	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.020	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.021	0.016	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.031	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	33.789	0.107	ug/L	20	"	"	"	"	
1,2-Dichloropropane	ND	0.023	ug/L	10	"	"	"	"	
<b>Bromodichloromethane</b>	0.254	0.033	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.020	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.023	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.211	0.038	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.025	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.020	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.043	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	0.744	0.068	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.038	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.046	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	2.253	0.022	ug/L	"	"	"	"	"	



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13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-6-10 DUP (7506002-05) Vapor    Sampled: 07-Jun-05    Received: 07-Jun-05</b>									
<b>m,p-Xylene</b>	3.987	0.022	ug/L	10	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
<b>Styrene</b>	0.068	0.042	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	1.170	0.022	ug/L	"	"	"	"	"	
<b>Bromoform</b>	0.061	0.052	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.068	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.049	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.038	0.025	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.069	0.049	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.026	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.060	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.074	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.106	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>									
		95.8 %	75-125		"	"	"	"	
<b>ASG-7-5 (7506002-06) Vapor    Sampled: 07-Jun-05    Received: 07-Jun-05</b>									
<b>Dichlorodifluoromethane</b>	0.002	0.002	ug/L	1	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.034	0.003	ug/L	"	"	"	"	"	
<b>Acetone</b>	0.121	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.014	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.013	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.027	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
<b>Chloroform</b>	0.007	0.002	ug/L	"	"	"	"	"	



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Reported:  
13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-7-5 (7506002-06) Vapor</b> <b>Sampled: 07-Jun-05</b> <b>Received: 07-Jun-05</b>									
1,1,1-Trichloroethane	ND	0.002	ug/L	1	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
1,2-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.021	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	1.770	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.169	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
<b>Tetrachloroethene</b>	0.008	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	0.607	0.002	ug/L	"	"	"	"	"	
<b>m,p-Xylene</b>	1.127	0.002	ug/L	"	"	"	"	"	
<b>Styrene</b>	0.011	0.004	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.477	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
<b>4-Ethyltoluene</b>	0.019	0.005	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.039	0.002	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.078	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

97.4 %

75-125

"

"

"

"



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## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-7-10 (7506002-07) Vapor Sampled: 07-Jun-05 Received: 07-Jun-05</b>									
Dichlorodifluoromethane	ND	0.010	ug/L	4	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
Chloromethane	ND	0.008	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.014	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.010	ug/L	"	"	"	"	"	
Bromomethane	ND	0.015	ug/L	"	"	"	"	"	
Chloroethane	ND	0.005	ug/L	"	"	"	"	"	
<b>Trichlorofluoromethane</b>	0.031	0.011	ug/L	"	"	"	"	"	
<b>Acetone</b>	1.043	0.095	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.008	ug/L	"	"	"	"	"	
<b>1,1,2-Trichlorotrifluoroethane</b>	0.043	0.015	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.014	ug/L	"	"	"	"	"	
<b>Carbon disulfide</b>	0.020	0.006	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.008	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.007	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.007	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>2-Butanone</b>	0.082	0.012	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.016	ug/L	"	"	"	"	"	
Chloroform	ND	0.010	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.010	ug/L	"	"	"	"	"	
1,2-Dichloroethane	ND	0.008	ug/L	"	"	"	"	"	
<b>Benzene</b>	0.023	0.006	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.013	ug/L	"	"	"	"	"	
<b>Trichloroethene</b>	0.590	0.021	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.009	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.013	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.009	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.008	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.009	ug/L	"	"	"	"	"	
<b>Toluene</b>	0.169	0.015	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.010	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.008	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.017	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.027	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.015	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.018	ug/L	"	"	"	"	"	
<b>Ethylbenzene</b>	1.213	0.009	ug/L	"	"	"	"	"	



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13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>ASG-7-10 (7506002-07) Vapor Sampled: 07-Jun-05 Received: 07-Jun-05</b>									
<b>m,p-Xylene</b>	2.080	0.009	ug/L	4	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
<b>Styrene</b>	0.037	0.017	ug/L	"	"	"	"	"	
<b>o-Xylene</b>	0.953	0.009	ug/L	"	"	"	"	"	
<b>Bromoform</b>	0.067	0.021	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.027	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.020	ug/L	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	0.030	0.010	ug/L	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	0.059	0.020	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.010	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.024	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.030	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.043	ug/L	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		97.9 %	75-125		"	"	"	"	
<b>TRIP BLANK (7506002-08) Vapor Sampled: 07-Jun-05 Received: 07-Jun-05</b>									
Dichlorodifluoromethane	ND	0.002	ug/L	1	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
Chloromethane	ND	0.002	ug/L	"	"	"	"	"	
Dichlorotetrafluoroethane	ND	0.003	ug/L	"	"	"	"	"	
Vinyl chloride	ND	0.003	ug/L	"	"	"	"	"	
Bromomethane	ND	0.004	ug/L	"	"	"	"	"	
Chloroethane	ND	0.001	ug/L	"	"	"	"	"	
Trichlorofluoromethane	ND	0.003	ug/L	"	"	"	"	"	
Acetone	ND	0.024	ug/L	"	"	"	"	"	
1,1-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	0.004	ug/L	"	"	"	"	"	
Methylene chloride	ND	0.003	ug/L	"	"	"	"	"	
Carbon disulfide	ND	0.002	ug/L	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.002	ug/L	"	"	"	"	"	
Methyl tert-butyl ether	ND	0.002	ug/L	"	"	"	"	"	
Vinyl acetate	ND	0.002	ug/L	"	"	"	"	"	
1,1-Dichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Butanone	ND	0.003	ug/L	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.004	ug/L	"	"	"	"	"	
Chloroform	ND	0.002	ug/L	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	





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13-Jun-05

## Volatile Organic Compounds in Air by EPA Method TO-15

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>TRIP BLANK (7506002-08) Vapor Sampled: 07-Jun-05 Received: 07-Jun-05</b>									
1,2-Dichloroethane	ND	0.002	ug/L	1	7F50801	08-Jun-05	08-Jun-05	EPA TO-15	
Benzene	ND	0.002	ug/L	"	"	"	"	"	
Carbon tetrachloride	ND	0.003	ug/L	"	"	"	"	"	
Trichloroethene	ND	0.005	ug/L	"	"	"	"	"	
1,2-Dichloropropane	ND	0.002	ug/L	"	"	"	"	"	
Bromodichloromethane	ND	0.003	ug/L	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
4-Methyl-2-pentanone	ND	0.002	ug/L	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.002	ug/L	"	"	"	"	"	
Toluene	ND	0.004	ug/L	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.002	ug/L	"	"	"	"	"	
2-Hexanone	ND	0.002	ug/L	"	"	"	"	"	
Dibromochloromethane	ND	0.004	ug/L	"	"	"	"	"	
Tetrachloroethene	ND	0.007	ug/L	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.004	ug/L	"	"	"	"	"	
Chlorobenzene	ND	0.005	ug/L	"	"	"	"	"	
Ethylbenzene	ND	0.002	ug/L	"	"	"	"	"	
m,p-Xylene	ND	0.002	ug/L	"	"	"	"	"	
Styrene	ND	0.004	ug/L	"	"	"	"	"	
o-Xylene	ND	0.002	ug/L	"	"	"	"	"	
Bromoform	ND	0.005	ug/L	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L	"	"	"	"	"	
4-Ethyltoluene	ND	0.005	ug/L	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.002	ug/L	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.005	ug/L	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
Benzyl chloride	ND	0.003	ug/L	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.006	ug/L	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.007	ug/L	"	"	"	"	"	
Hexachlorobutadiene	ND	0.011	ug/L	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

89.0 %

75-125

"

"

"

"



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## Volatile Organic Compounds in Air by EPA Method TO-15 - Quality Control

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch 7F50801 - TO-15

#### Blank (7F50801-BLK1)

Prepared & Analyzed: 08-Jun-05

Dichlorodifluoromethane	ND	0.002	ug/L
Chloromethane	ND	0.002	ug/L
Dichlorotetrafluoroethane	ND	0.003	ug/L
Vinyl chloride	ND	0.003	ug/L
Bromomethane	ND	0.004	ug/L
Chloroethane	ND	0.001	ug/L
Trichlorofluoromethane	ND	0.003	ug/L
Acetone	ND	0.024	ug/L
1,1-Dichloroethene	ND	0.002	ug/L
1,1,2-Trichlorotrifluoroethane	ND	0.004	ug/L
Methylene chloride	ND	0.003	ug/L
Carbon disulfide	ND	0.002	ug/L
trans-1,2-Dichloroethene	ND	0.002	ug/L
Methyl tert-butyl ether	ND	0.002	ug/L
Vinyl acetate	ND	0.002	ug/L
1,1-Dichloroethane	ND	0.002	ug/L
2-Butanone	ND	0.003	ug/L
cis-1,2-Dichloroethene	ND	0.004	ug/L
Chloroform	ND	0.002	ug/L
1,1,1-Trichloroethane	ND	0.002	ug/L
1,2-Dichloroethane	ND	0.002	ug/L
Benzene	ND	0.002	ug/L
Carbon tetrachloride	ND	0.003	ug/L
Trichloroethene	ND	0.005	ug/L
1,2-Dichloropropane	ND	0.002	ug/L
Bromodichloromethane	ND	0.003	ug/L
cis-1,3-Dichloropropene	ND	0.002	ug/L
4-Methyl-2-pentanone	ND	0.002	ug/L
trans-1,3-Dichloropropene	ND	0.002	ug/L
Toluene	ND	0.004	ug/L
1,1,2-Trichloroethane	ND	0.002	ug/L
2-Hexanone	ND	0.002	ug/L
Dibromochloromethane	ND	0.004	ug/L
Tetrachloroethene	ND	0.007	ug/L



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## Volatile Organic Compounds in Air by EPA Method TO-15 - Quality Control

### H & P Mobile Geochemistry Lab 7

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

#### Batch 7F50801 - TO-15

#### Blank (7F50801-BLK1)

Prepared & Analyzed: 08-Jun-05

1,2-Dibromoethane (EDB)	ND	0.004	ug/L
Chlorobenzene	ND	0.005	ug/L
Ethylbenzene	ND	0.002	ug/L
m,p-Xylene	ND	0.002	ug/L
Styrene	ND	0.004	ug/L
o-Xylene	ND	0.002	ug/L
Bromoform	ND	0.005	ug/L
1,1,2,2-Tetrachloroethane	ND	0.007	ug/L
4-Ethyltoluene	ND	0.005	ug/L
1,3,5-Trimethylbenzene	ND	0.002	ug/L
1,2,4-Trimethylbenzene	ND	0.005	ug/L
1,3-Dichlorobenzene	ND	0.006	ug/L
Benzyl chloride	ND	0.003	ug/L
1,4-Dichlorobenzene	ND	0.006	ug/L
1,2-Dichlorobenzene	ND	0.006	ug/L
1,2,4-Trichlorobenzene	ND	0.007	ug/L
Hexachlorobutadiene	ND	0.011	ug/L

Surrogate: 4-Bromofluorobenzene	55.2	62.5	88.3	75-125
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### Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

## ATTACHMENT B

### Indoor Air Quality Sampling Protocol

# **INDOOR AIR QUALITY SAMPLING PROTOCOL**

## **1.0 INTRODUCTION**

This protocol describes the procedures to be followed during indoor air quality (IAQ) sampling activities.

The procedures presented herein are intended to be of general use and may be supplemented by a work plan and/or health and safety plan. As the work progresses, and if warranted, appropriate revisions may be made by the Project Manager or Project Engineer. Detailed procedures in this protocol may be superseded by applicable regulatory requirements.

## **2.0 PRE-SAMPLING INVESTIGATION**

Prior to IAQ sample collection, a pre-sampling investigation may be conducted, if appropriate (e.g., in the event that IAQ sampling has not been performed previously in a particular residence), to qualitatively evaluate the presence of the factors that may influence indoor air contamination in the building under study. The pre-sampling investigation may include a pre-screening survey and a pre-IAQ sampling inspection.

### **2.1 Pre-Screening Survey**

The pre-screening survey will include an initial home visit, which will be conducted with the building occupants/owners present and using a survey form provided in the State of Massachusetts *Indoor Air Sampling and Evaluation Guidance* (dated April 2002) and included as an attachment to this protocol (building inventory form). During the pre-screening survey, preferential contaminant pathways (i.e., utility corridors, sumps, pipes, visible cracks in the building foundation) will be identified, recorded, and measured for the presence of total organic vapors using a photoionization detector (PID) with a 10.6-electron-volt lamp calibrated against an isobutylene standard. PID readings from each identified preferential pathway will be recorded on the building inventory form.

All readily visible commercial and household products stored within a residence will be inventoried to provide an accurate assessment of their potential contribution to the presence of contaminants in indoor air. The observed products will be listed on the HOUSEHOLD PRODUCT INVENTORY FORM, and PID readings will be measured and recorded near the stored containers.

### **2.2 Pre-Sampling Inspection**

A pre-sampling inspection will be performed two to three days prior to indoor air sampling activities to ensure that home conditions have not changed since the pre-screening survey.

## **3.0 INDOOR AIR SAMPLING**

Indoor air sampling will be conducted in an environment that is representative of normal building use. Heating and air conditioning systems will be operated normally for the season and time of day during sampling.

**Sampling Duration:** For evaluation of residential receptors, indoor air samples will be collected over a 24-hour period.

**Crawl Space Sampling:** If crawl spaces, an attic, or storage areas are identified within the house, an air sample may be collected in one of these spaces, as the possibility of contaminant accumulation might exist in these areas, especially if they are not often opened or used on regular basis and air exchange is limited. If a crawl space or other semi-confined space is selected for sampling, the OVM will be used to measure for the presence of total organic vapors within the space prior to sampling, and then again at the time the sampling canisters are retrieved on completion of sampling. OVM measurements will be recorded on the FIELD INVESTIGATION DAILY LOG. With the exception that OVM measurements will be collected and recorded prior to and on completion of sampling, IAQ samples collected from crawl spaces or other semi-confined areas will be collected, shipped, and analyzed following the same procedures as the other air samples.

**Sample Containers:** Samples will be collected in 6-L evacuated stainless steel SUMMA™ canisters. The canisters will be fitted with a calibrated flow controller. Once the top valve on a canister is opened, the canister will be set to fill with air slowly, over a 24-hour sampling period.

**Ambient (Outdoor) Air Samples:** One upwind outdoor air sample will be collected for each home where IAQ sampling (including crawlspace sampling) is conducted. The sampler will be set approximately 5-feet off the ground and upwind of the home. The ambient air sampling will begin one hour before the indoor air samples are set to begin sample collection. The ambient air sampling will end 30 minutes before the end of the indoor air sampling.

**Sample Analysis:** All collected air samples will be sent to a California State-certified laboratory for volatile organic compounds (VOC) analysis by United States Environmental Protection Agency (USEPA) Method TO-15, and for TCE and benzene by USEPA Method TO-15 in Selective Ion Mode (SIM) to achieve reporting limits less than  $1 \mu\text{g}/\text{m}^3$  for these two compounds.

#### **4.0 SAMPLE LABELING**

Sample containers will be labeled prior to sampling with the following information:

- Company name
- Project name
- Project number
- Sample I.D. number
- Date and time sample was collected
- Initials of sample collector

#### **5.0 FIELD QUALITY CONTROL SAMPLES**

The laboratory will use only certified clean sample collection devices. Precautions will be taken to avoid sample interference such as fueling vehicles prior to sampling or the use of permanent marking pens in the field. In order to evaluate the precision and accuracy of analytical data, quality control samples will be prepared as described below. These samples will be collected, or prepared and analyzed by the laboratory, as specified below.

## **5.1 Trip Blanks**

A minimum of one trip blank per IAQ sampling event will be collected and analyzed for the target compound(s). Trip blanks will be prepared to evaluate sample cross-contamination during shipment to and from the analytical laboratory.

## **5.2. Duplicates**

At least one duplicate sample per IAQ sampling event will be collected and shipped to the laboratory for the analysis.

# **6.0 HANDLING, STORAGE, AND TRANSPORTATION**

To protect sample integrity the following steps will be undertaken:

- IAQ samples will not be chilled.
- IAQ samples collected in Summa™ canisters will be analyzed within 72 hours after collection.

# **7.0 DOCUMENTATION**

## **7.1 Field Data Sheets**

A FIELD INVESTIGATION DAILY LOG will be completed for each day of field work. Information recorded on the FIELD INVESTIGATION DAILY LOG will include a description of any deviation from the SAP that was necessitated by field conditions, such as equipment failure, samples that could not be collected, sample locations that were changed, etc. Sample numbers may also be recorded on the FIELD INVESTIGATION DAILY LOG as a means of identifying and tracking the samples. If a pre-screening survey is conducted, a BUILDING INVENTORY FORM will also be completed. Following review by the Project Manager or Project Engineer, the original records will be kept in the project file. Photographs may also be included in the project file, as appropriate.

## **7.2 Chain-Of-Custody Procedures**

After samples have been collected and labeled they will be maintained under chain-of-custody procedures. These procedures document the transfer of custody of samples from the field to the laboratory. Each sample sent to the laboratory for analysis will be recorded on a CHAIN-OF-CUSTODY form, which will include instructions to the laboratory for analytical services and requested turn-a-round times.

Information contained on the triplicate CHAIN-OF-CUSTODY record will include:

- Project name
- Project number
- Signature of sampler(s)



- Date and time sampled
- Sample I.D.
- Number of sample containers
- Sample matrix (air)
- Analyses required
- Remarks, including special conditions or specific quality control measures
- Turnaround time and person to receive laboratory report
- Release signature of sampler(s), and signatures of all people assuming custody
- Condition of samples, when received by laboratory

Blank spaces on the CHAIN-OF-CUSTODY will be crossed out and initialed by the sampler between the last sample listed and the signatures at the bottom of the sheet.

The field sampler will sign the CHAIN-OF-CUSTODY and will record the time and date at the time of transfer to the laboratory or to an intermediate person. A set of signatures is required for each relinquished/reserved transfer, including internal transfer. The original imprint of the CHAIN-OF-CUSTODY record will accompany the sample containers. A duplicate copy will be placed in the project file.

Forms Used: Building Inventory Form  
Household Products Inventory Form  
Daily Field Record  
Chain-of-Custody Form

## BUILDING INVENTORY FORM

This form must be completed for each building involved in an indoor air investigation.

Preparer's name \_\_\_\_\_ Date prepared \_\_\_\_\_

Preparer's affiliation \_\_\_\_\_

Telephone number \_\_\_\_\_

### 1. OCCUPANT

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_

City \_\_\_\_\_

Home telephone number \_\_\_\_\_

Office telephone number \_\_\_\_\_

### 2. OWNER OR LANDLORD

Name \_\_\_\_\_  
(If different than occupant)

Address \_\_\_\_\_  
\_\_\_\_\_

Telephone number \_\_\_\_\_

#### A. Type of Building Construction

Type (circle appropriate responses):      Single Family      Multiple Dwelling      Commercial

Ranch

Raised ranch

Split level

Colonial

Mobile home

Two-family

Duplex

Apartment building:

Number of units \_\_\_\_\_

Number of floors \_\_\_\_\_

Other \_\_\_\_\_

Building Age \_\_\_\_\_

Number of stories \_\_\_\_\_

General description of building construction materials \_\_\_\_\_  
\_\_\_\_\_

Is the building insulated? Yes / No

How air tight is the building? \_\_\_\_\_

**B. Foundation Characteristics (circle all that apply)**

1. Full basement, crawlspace, slab on grade, other \_\_\_\_\_
2. Basement floor description: concrete, dirt, wood, other \_\_\_\_\_
  - a. The basement is: wet, damp, dry \_\_\_\_\_
  - b. Sump present? yes / no \_\_\_\_\_ Water in sump? yes / no \_\_\_\_\_
  - c. The basement is: finished, unfinished \_\_\_\_\_
  - d. Is the basement well sealed? Provide a description \_\_\_\_\_  
\_\_\_\_\_
3. Concrete floor description: unsealed, painted, covered; with \_\_\_\_\_
4. Foundation walls: poured concrete, block, stone, wood, other \_\_\_\_\_
5. Identify all potential soil gas entry points and their size (e.g., cracks, voids, pipes, utility ports, sumps, drain holes, etc.). Include these points on the building diagram.

**C. Heating, Ventilation, and Air Conditioning (circle all that apply)**

1. The type of heating system(s):

Hot Air Circulation	Heat Pump
Hot Water Radiation	Unvented Kerosene Heater
Steam Radiation	Wood Stove
Electric Baseboard	Other (specify) _____
2. The type of fuel used: Natural Gas, Fuel Oil, Electric, Wood, Coal, Solar  
Other (specify) \_\_\_\_\_
3. Location of heating system: \_\_\_\_\_
4. Is there air-conditioning? yes / no      Central Air or Window Units?  
Specify the location \_\_\_\_\_
5. Are there air distribution ducts present? yes / no
6. Describe the supply and cold air return duct work including whether there is a cold air return and comment on the tightness of duct joints.  
\_\_\_\_\_

7. Is there a whole house fan? yes/no \_\_\_\_\_  
What is the rated size of the fan? \_\_\_\_\_
8. Temperature settings inside during sampling. Note day and night temperatures.
  - a. Daytime temperature(s) \_\_\_\_\_
  - b. Nighttime temperature(s) \_\_\_\_\_  
(Note times if system cycles during non-occupied hours during the day)
9. Estimate the average time doors and windows are open to allow fresh outside air into the building.  
Note rooms that frequently have open windows or doors.  
\_\_\_\_\_

**D. Potential Indoor Sources of Pollution**

1. Is the laundry room located inside the home? yes / no
2. Has the house ever had a fire? yes / no
2. Is there an attached garage? yes / no
3. Is a vehicle normally parked in the garage? yes / no
4. Is there a kerosene heater present? yes / no
5. Is there a workshop, hobby or craft area in the residence? yes / no
6. An inventory of all products used or stored in the home should be performed. Any products that contain volatile organic compounds or chemicals similar to the target compounds should be listed. The attached product inventory form should be used for this purpose.
7. Is there a kitchen exhaust fan? yes / no Where is it vented? \_\_\_\_\_
8. Is the stove gas or electric? \_\_\_\_\_ Is the oven gas or electric? \_\_\_\_\_
9. Is there an automatic dishwasher? yes / no
10. Is smoking allowed in the building? yes / no
11. Has the house ever been fumigated or sprayed for pests? If yes, give date, type and location of treatment.  
\_\_\_\_\_

**E. Water and Sewage (Circle the appropriate response)**

**Source of Water**

Public Water   Drilled Well   Driven Well   Dug Well   Other (Specify) \_\_\_\_\_

**Water Well Specifications**

Well Diameter \_\_\_\_\_ Grouted or Ungouted \_\_\_\_\_

Well Depth \_\_\_\_\_ Type of Storage Tank \_\_\_\_\_

Depth to Bedrock \_\_\_\_\_ Size of Storage Tank \_\_\_\_\_

Feet of Casing \_\_\_\_\_ Describe type(s) of Treatment \_\_\_\_\_

### **Water Quality**

Taste and/or odor problems with water? yes / no If so, describe \_\_\_\_\_

Is the water chlorinated, brominated, or ozonated? yes / no \_\_\_\_\_

How long has the taste and/or odor problem been present? \_\_\_\_\_

**Sewage Disposal:** Public Sewer Septic Tank Leach Field Other (Specify) \_\_\_\_\_

Distance from well to septic system \_\_\_\_\_ Type of septic tank additives \_\_\_\_\_

### **F. Plan View**

Sketch each floor and if applicable, indicate air sampling locations, possible indoor air pollution sources, preferential pathways and field instrument readings.

### **G. Potential Outdoor Sources of Pollution**

Draw a diagram of the area surrounding the building being sampled. If applicable, provide information on the spill locations (if known), potential air contamination sources (industries, service stations, repair shops, retail shops, landfills, etc.), outdoor air sampling locations, and field instrument readings.

Also, on the diagram, indicate barometric pressure, weather conditions, ambient and indoor temperatures, compass direction, wind direction and speed during sampling, the locations of the water wells, septic systems, and utility corridors if applicable, and a qualifying statement to help locate the site on a topographical map.

## HOUSEHOLD PRODUCTS INVENTORY FORM

Occupant of Building \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

Field Investigator \_\_\_\_\_ Date \_\_\_\_\_

<b>Product Description (commercial name, dispenser type, container size, manufacturer, etc.)</b>	<b>Volatile Ingredients in the Product</b>	<b>Field Instrument Reading</b>

Comments:

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## ATTACHMENT C

### Drilling and Destruction of Soil Boring Protocol

# **DRILLING AND DESTRUCTION OF SOIL BORINGS PROTOCOL**

## **1.0 INTRODUCTION**

This protocol describes the procedures to be followed during drilling and destruction of soil borings. The soil borings to be advanced at the Site are intended to provide information on Site stratigraphy and will allow identification of the saturated zone. If the soil boring is ultimately utilized for well installation, the well will be installed in accordance with the protocol described in INSTALLATION OF WELLS.

The procedures presented herein are intended to be of general use and may be supplemented by a work plan and/or health and safety plan. As the work progresses and if warranted, appropriate revisions may be made by the project manager. Detailed procedures in this protocol may be superseded by applicable regulatory requirements.

A DAILY FIELD RECORD will be completed for each day of fieldwork, and the original will be kept in the project files. Where required, soil boring permits will be acquired from the appropriate agency or agencies before drilling is initiated. At each boring location an underground utility check will be conducted before drilling begins. Underground utility checks will, at a minimum, consist of contacting Underground Service Alert.

## **2.0 DRILLING**

Soil borings will be drilled using hollow stem auger, direct push, or other appropriate drilling technique.

Hollow stem auger drilling technology generally does not require the use of drilling fluid. It employs flighted tubing and rotation to advance through the formation and remove drill cuttings. The hollow tubing maintains the integrity of the bore hole and facilitates soil sampling and well installation. In general, a helical or spiral tool form is used to move material from the subsurface to the surface, a bit at the bottom cuts into the subsurface material and spiral augers on outside convey the material to the surface while spinning. The center of auger is hollow like a straw when the inner drive rods and plug are removed. The hollow augers hold the borehole open for ground water sampling and well installation. During drilling with the hollow stem auger, the drill cuttings will be discharged through the open hole; the sediment will be shoveled and transferred into appropriate soil waste bins for transport and disposal.

A Geoprobe does not require the use of drilling fluid. It is a hydraulically-powered, percussion/probing machine. It's hydraulically powered either from a vehicle or an auxiliary engine. It uses static force and the dynamic percussion force of a soil probing hammer to advance small diameter sampling tools. It rearranges particles in the subsurface by application of weight and percussion to advance a tool string and produces no cuttings in the process. The planned depth of each soil boring will be determined by the project manager before drilling. The field geologist/engineer will specify to the drill rig operator the desired total depth of the boring, the depth of soil sample collection, method of sample retrieval, and other matters pertaining to



the satisfactory completion of the borings. The field geologist/engineer will observe the volume of drill cuttings returned to assess whether significant cavitation has occurred. Drill cuttings, unused soil samples, and drilling fluids generated during drilling of soil borings will be stored properly for future disposal by the client, unless other arrangements have been made.

The drill rods, drill pipe, hoses, bits, and other components that fluids and cuttings contact will be steam-cleaned before drilling at each boring location. Only potable water from a municipal supply will be used for decontamination of drilling equipment. Decontamination rinseate will be collected and stored properly for future disposal by the client, unless other arrangements have been made.

### **3.0 SAMPLING AND LOGGING**

#### **3.1 Obtaining Samples**

Borings will be cored or sampled at depth intervals specified by the project manager, based on the intended use of the boring. Samples and/or cuttings will be obtained for logging purposes at a minimum 5-foot interval for all borings. The samples and/or drill cuttings will be collected and described. A lithological log of these samples will be made. Samples for chemical analysis will be collected in accordance with the protocol SOIL SAMPLING FOR CHEMICAL ANALYSIS.

#### **3.2 Discrete Sampling**

For discrete sampling of borings, sampling will be accomplished by driving or pushing a split barrel sampler or Shelby tube. The field geologist/engineer will record information on the BORING LOG pertaining to the sampling, such as rate of penetration, drive-hammer blow count, coring smoothness, and sample recovery. In general, the split-barrel sampler will be opened for observation and logging of the retrieved core.

At selected depth intervals, the split-barrel sampler may be fitted with brass or stainless steel liners for collection of soil samples for possible subsequent chemical or physical testing. Samples may be retained for future review and/or preserved for chemical and physical testing, as specified by the project manager. The samples will be stored and labeled to show project number, boring number, and cored interval denoted either by depth or a sequential numbering system. Procedures for preservation and transport of soil samples retained for chemical analysis are presented in the protocol SOIL SAMPLING FOR PHYSICAL AND CHEMICAL ANALYSIS.

### **3.3 Logging of Exploratory Borings**

The observations of the field geologist/engineer will be recorded on a BORING LOG at the time of drilling. The drill rig operator and the field geologist/engineer will discuss significant changes in material penetrated, drilling conditions, hydraulic pressure, and drilling action. The field geologist/engineer will be present during drilling of soil borings and will observe and record such changes by time and depth.

Drill cuttings and core samples will be observed in the field. A lithologic description will be recorded on the BORING LOG using the Unified Soil Classification System (USCS) as described in the American Society of Testing and Materials (ASTM) Standard D 2488-90. This description will include the USCS soil type, grain sizes and estimated percentages of each, moisture content, color according to the Munsell color charts, plasticity for fine-grained materials, consistency, and other pertinent information, such as degree of induration, calcareous content, presence of fossil and other distinctive materials.

The original field logs will be retained for review by the responsible professional and for storage in the project files.

## **4.0 FIELD SCREENING**

Soil samples collected from the borings may be screened using a portable meter such as a photoionization detector (PID), a flame ionization detector (FID), a lower explosion limit (LEL) meter or other organic vapor meter. The meter may be used to assess the presence of volatile organic compounds (VOCs) or other gases in soil samples. Procedures for field screening are described in the protocol SOIL SAMPLING FOR PHYSICAL AND CHEMICAL ANALYSIS.

## **5.0 DESTROYING SOIL BORINGS**

Soil borings that are not completed as monitoring wells or vapor probes will be destroyed by grouting the borings with a neat cement grout, cement/sand grout, or cement/bentonite grout, or bentonite grout. ENVIRON field staff will calculate the borehole volume and compare it to the volume of grout used to evaluate whether bridging has occurred. These calculations and the actual volume emplaced will be noted on the BORING LOG. The grout will be placed in continuous lifts from the bottom of the boring to the ground surface. Additional grout will be added to the soil boring if significant settlement has occurred after the grout has set.

Forms Used: Field Investigation Daily Field Log  
Field Soil Boring Log

# FIELD INVESTIGATION DAILY LOG

PROJECT LOCATION: \_\_\_\_\_ DATE: \_\_\_\_\_

VISITORS/SUBCONTRACTORS: \_\_\_\_\_

[illegible]

Reviewed By (name/signature): \_\_\_\_\_ Date: \_\_\_\_\_

## FIELD SOIL BORING LOG

PROJECT NAME: \_\_\_\_\_ FIELD PERSON: \_\_\_\_\_  
PROJECT NUMBER: \_\_\_\_\_ PROJECT MANAGER: \_\_\_\_\_  
PROJECT LOCATION: \_\_\_\_\_ DATE: \_\_\_\_\_

BORING LOCATION MAP										SOIL BORING NUMBER:	
										DRILLING CONTRACTOR:	
										DRILLER:	
										RIG TYPE:	
										OTHER EQUIPMENT:	
										SAMPLING METHODS:	
										HAMMER WEIGHT: DROP:	
										TOTAL DEPTH: BOREHOLE DIAMETER:	
										START TIME: STOP TIME: (DATE IF NEC.)	
										BACKFILL TIME: DATE: BY:	
SAMPLE DEPTH	SAMPLER TYPE	BLOWS IN 6 INCHES	FEET DRIVEN	FEET RECOVERED	PID/FID (TOVs)	SAMPLE NUMBER	TIME	DEPTH IN FEET	USGS CODE/ CONTACT	DEPTH IN FEET	COMMENTS
											SAMPLE DESCRIPTION
								1			
								2			
								3			
								4			
								5			
								6			
								7			
								8			
								9			
								10			

# FIELD SOIL BORING LOG (CONT'D)

SAMPLE DEPTH	SAMPLER TYPE	BLOWS IN 6 INCHES	FEET DRIVEN	FEET RECOVERED	PID/FID (TOVs)	SAMPLE NUMBER	TIME	DEPTH IN FEET	USGS CODE/CONTACT	DEPTH IN FEET	BORING NUMBER: _____
								PROJECT NAME/NUMBER: _____			
								SAMPLE DESCRIPTION			
								1			
								2			
								3			
								4			
								5			
								6			
								7			
								8			
								9			
								0			
								1			
								2			
								3			
								4			
								5			
								6			
								7			
								8			
								9			
								0			

## **A T T A C H M E N T   D**

**Temporary, Permanent and Semi-Permanent Nested Vapor Probe Installation Protocol**

# **TEMPORARY, PERMANENT, AND SEMI-PERMANENT VAPOR PROBE INSTALLATION PROTOCOL**

## **1.0 INTRODUCTION**

This protocol describes the procedures to be followed during the installation of temporary, semi-permanent, and permanent vapor probes that will be installed as part of the Remedial Investigation Work Plan for the Wyle Laboratories Site. Drilling of the soil borings for the vapor probe installation will be performed in accordance with the protocol described in the DRILLING AND DESTRUCTION OF SOIL BORINGS.

The procedures presented herein are intended to be of general use and may be supplemented by a work plan and/or health and safety plan. As the work progresses and if warranted, appropriate revisions may be made by the project manager. Detailed procedures in this protocol may be superseded by applicable regulatory requirements.

## **2.0 VAPOR PROBE INSTALLATION**

A DAILY FIELD RECORD will be completed for each day of fieldwork, and the original will be kept in the project files. At each boring location an underground utility check will be conducted before drilling begins. Underground utility checks will, at a minimum, consist of contacting Underground Service Alert.

Single vapor probes will be installed at 5 feet below ground surface (bgs). Nested vapor probes will be installed at 5 feet bgs and at 3 feet above the depth at which ground water is encountered (provided that ground water is encountered at 13 or more feet bgs). If the depth to ground water exceeds 30 feet, probes will be installed at 5 and 15 feet bgs.

**Single Vapor Probe:** When installing a single vapor probe, the soil boring will be advanced to 6 ½ feet bgs, where it will be filled with hydrated granular bentonite to 5 feet bgs. Sand pack, number 2/16 Lapis Lustre, will be placed up to 5 feet where the tip of the probe connected to an 1/8 inch Nylaflo tubing will be positioned. After placing the tip of the probe, the hole will be filled with additional sand pack up to 4 1/2 feet bgs where an additional foot of hydrated granular bentonite will be added from 4 to 3 feet bgs. The remainder of the boring will be filled with hydrated medium bentonite chips. The vapor probes will be completed below grade in water tight, traffic rated boxes.

**Nested Vapor Probe:** For temporary, semi permanent, and permanent nested vapor probes, the shallower probe tips will be installed at 5 feet and at the deeper probe tip will be installed 3 feet above the depth at which ground water is encountered (provided ground water is encountered at 13 or more feet below ground surface). If the depth to ground water exceeds 30 feet, probes will be installed at 5 and 15 feet bgs. Each tip will be attached to an 1/8-inch Nylaflo tubing. The deeper probe will be packed with approximately one foot of number 2/16 Lapis Lustre sand within the probe depth, and approximately one foot of hydrated granular bentonite will be placed above the sand pack. The rest of the procedure follows the single vapor probe as described above. A

TYPICAL NESTED VAPOR PROBE CONSTRUCTION DIAGRAM is attached.

## **2.1 Surface Completion**

Vapor probes will be completed either below or above grade depending on whether the vapor probe is located in asphalt or in the open field. The vapor probes will be enclosed in a steel protective well cover (e.g., stovepipe) or a vault with a traffic-rated cover (if vapor probes are on asphalt). All vapor probe will be locked for security and will be designed to limit surface water infiltration.

## **2.2 Documentation**

Vapor probe installation will be summarized on the DAILY FIELD RECORD or on a specialized form produced for this purpose. Following review by the project manager, the original records will be kept in the project file.

## **3.0 CLEANING OF DRILLING EQUIPMENT**

Cleaning of the drill rig and associated drilling equipment will follow the procedures discussed in Section 2.0 of the protocol DRILLING AND DESTRUCTION OF SOIL BORINGS.

Forms Used: Daily Field Record  
Typical Nested Vapor Probe Diagram



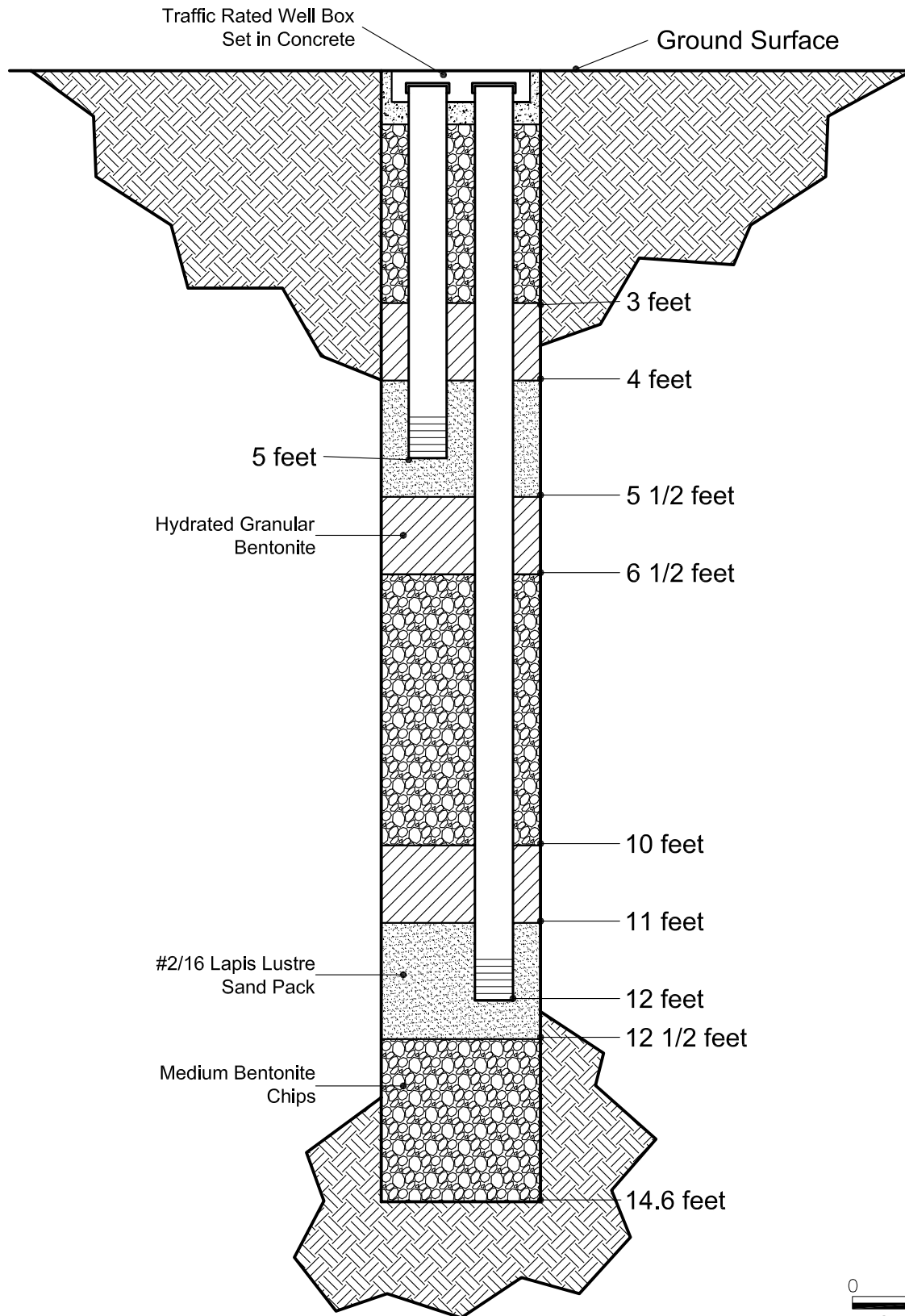
# FIELD INVESTIGATION DAILY LOG

PROJECT LOCATION: \_\_\_\_\_ DATE: \_\_\_\_\_

VISITORS/SUBCONTRACTORS: \_\_\_\_\_

[illegible]

Reviewed By (name/signature): \_\_\_\_\_ Date: \_\_\_\_\_



**ENVIRON**

## Typical Nested Vapor Probe Construction Diagram

Wyle Laboratories, Norco, California

Drafter: JJC

Date: 12/22/04

Contract Number: 04-8099S

Revised: 7/07/05

## ATTACHMENT E

### Active and Passive Soil Gas Sampling Protocol

# ACTIVE AND PASSIVE SOIL VAPOR SAMPLING PROTOCOL

## 1.0 INTRODUCTION

This protocol describes the procedures to be followed during sampling of soil vapor for laboratory chemical analysis. The laboratory must be California State-certified by the appropriate regulating agency for the analyses to be performed.

The procedures presented herein are intended to be of general use and may be supplemented by a work plan and/or health and safety plan. As the work progresses, and if warranted, appropriate revisions may be made by the Project Manager or Project Engineer. Detailed procedures in this protocol may be superseded by applicable regulatory requirements.

## 2.0 ACTIVE SOIL VAPOR SAMPLING

*Soil vapor samples will be collected and analyzed in accordance with DTSC-RWQCB guidelines (Advisory - Active Soil Gas Investigations, dated January 28, 2003). Soil gas samples will be collected at depths of approximately 5 feet below ground surface, and approximately 3 feet above the depth at which ground water is first encountered, assuming the depth to ground water is greater than 13 feet. If the depth to ground water exceeds 30 feet, soil gas samples will be collected at depths of approximately 5 feet and 15 feet below ground surface.*

### 2.1 Sample Collection

**Purging Monitoring Well/Probe:** The well or probe to be sampled will be purged before sampling in order to remove stagnant or ambient air in an effort to obtain soil gas that is representative of general subsurface conditions. The well or probe should be purged and sampled as follows:

Connect the well or probe to be sampled to the extraction device and purge the tube. A site-specific purge volume versus contaminant concentration test will be conducted as the first soil gas sampling activity. This test will be performed at the test point where the contaminant concentrations are suspected to be the highest. The purge volume will be estimated based on summation of the volume of the sample container, internal volume of tubing used, and annular space around the probe tip. The step purge test of one, three, and seven purge volumes will be conducted as a means to determine the purge volume to be used at all sampling points. If no contaminants are detected during the step purge test, three purge volumes will be extracted prior to sampling at each location.

**Leak Test:** A leak test will be conducted at every soil gas probe in order to prevent sample dilution with ambient air. A leak check compound will be placed where ambient air could enter the sampling system (i.e., sample system connection, surface bentonite seal, top of the temporary soil gas probe).

**Purge/Sample Flow Rate:** The purging and sampling flow rate will be selected so as to not enhance compound partitioning during soil gas sampling. A vacuum device (gas tight syringe) will be used between the soil gas sample tubing and the soil gas extraction device (vacuum pump,

Summa™ canister) to qualitatively determine if a high vacuum (no-flow or low-flow) soil condition is present.

Purging/sampling will be conducted at flow rates between 100 to 200 milliliters per minute (ml/min). The purge/sample rate may be modified based on conditions encountered in individual soil gas probes.

## **2.2 Sample Containers**

Soil gas samples will be collected in gas-tight, opaque/dark containers (e.g., syringes, glass bulbs wrapped in aluminum foil, Summa™ canisters). Tedlar™ bags will not be used to collect VOC samples.

If a syringe is used, it will be leak-checked before each use by closing the exit valve and attempting to force ambient air through the needle. If syringe samples are analyzed within five minutes of collection, aluminum foil wrapping will not be applied.

If Summa™ canisters are used, a flow regulator will be placed between the probe and the canister to ensure that the canister is filled at the low flow rate as specified above.

## **2.3 Sample Container Cleanliness and Decontamination**

Prior to its use at a sample location, each sample container will be assured clean by the analytical laboratory as follows:

- New containers will be determined to be free of contaminants by the supplier, and
- Reused/recycled containers: method blank(s), as specified below, should be used to verify sample container cleanliness.

After each use, reusable sample containers will be properly decontaminated, as follows:

- Glass syringes or bulbs will be disassembled and baked at 240° C for a minimum of 15 minutes.
- Summa™ canisters will be properly decontaminated as specified in the appropriate EPA analytical method.
- Plastic syringes should be used only once.

A SOIL GAS SAMPLING LOG will be used to record the following information:

- Sample I.D.
- Duplicate I.D., if applicable
- Date and time sampled
- Name of sample collector

- Probe number
- Depth at which soil gas sample is collected
- Purge volume and purge rate
- Extraordinary circumstances (if any)
- Number and type of sample container(s)

### **3.0 PASSIVE SOIL VAPOR SAMPLING**

A passive soil gas sampling method will be used at locations where the presence of shallow bedrock (less than 5 feet) prevents boring advancement using direct push or hollow stem auger drilling techniques. Passive soil gas investigations utilize probes that are placed in the ground (a minimum of 1 foot below the ground surface) for an extended period of time ranging from days to weeks. The probes function to adsorb soil gas compounds on sorbent material via ambient flow of soil vapor in the subsurface. The probe is removed from the ground after a nominal time and transported to a laboratory where adsorbed contaminants are desorbed and analyzed for the appropriate chemicals of concern.

An example of a passive soil gas sampling device is the GORE-SORBER." The GORE-SORBER® is constructed with a patented sorbent material that optimizes sorption sites by various target compounds and hydrophobic sensitivity to those compounds.

#### **3.1 General Description**

The GORE-SORBER Screening Survey uses GORE-SORBER modules to collect soil gas samples. The GORE SORBER module is a passive soil gas sampler that is designed to collect a broad range of VOCs and semi-volatile organic compounds (SVOCs), including halogenated compounds, petroleum hydrocarbons, and polynuclear aromatic hydrocarbons. A typical GORE-SORBER module contains two or more passive collection units called sorbers. Each sorber contains an equal amount of sorbent materials (polymeric and carbonaceous resins). These granular adsorbent materials are used because of their affinity for a broad range of VOCs and SVOCs. The sorbers are sheathed in the bottom of a 4-foot-long, vapor-permeable retrieval cord. The cord and the sorbers are constructed of inert, hydrophobic, microporous GORE-TEX expanded polytetrafluoroethylene (ePTFE). The microporous structure of ePTFE allows vapors to move freely across the membrane and onto the sorbent material. This microporous structure also protects the granular adsorbents from physical contact with soil particulates and water. The GORE-SORBER module is installed to a depth of 2 feet to 3 feet. A pilot hole is created using a slide hammer and tile probe or hand drill (in paved areas). The sampler is then manually inserted into the hole using push rods. The module is retrieved by hand and must be analyzed by the developer.

#### **3.2 Required Tools/Supplies**

GORE-SORBER Modules can be installed at any depth. Modules require only a narrow pilot hole (approximately 1/2-inch to 3/4-inch in diameter), typically drilled or driven to a depth of 2 feet to 3 feet using hand tools (depending on project objectives, installation depth may vary at a site).

The following items are provided by GORE:

- Shipping boxes containing individually numbered GORE-SORBER Modules, including trip blanks
- Stainless-steel insertion rod in threaded sections (for placement of modules in pre-drilled/driven pilot holes)
- Corks with screw eyes attached
- String (cord) to allow the module to be installed to the recommended depth
- CHAIN-OF-CUSTODY and Installation/Retrieval Log

### **3.3 Module Installation**

To facilitate installation of modules, the cord and corks will be prepared before going to the field. For each module, a piece of the supplied polypropylene cord will be cut to a length of approximately 7.0 feet (2.25 meters) and the ends of the cord tied together using a non-slip knot. This loop should be long enough to allow for an installation of 3 feet (one meter) into the subsurface. The looped cord will be passed through the cork eyelet and pulled back through itself. This will attach the cord to the cork. The remainder of the cord will be wrapped around the cork and the cord/cork combination secured with a rubber band. The cork and cord will be ready to attach to the module after the pilot hole is created at the installation location.

- Utility clearance will be conducted before digging or probing.
- Modules will not be installed within 15 feet of monitoring wells, utility trenches or other conduits, which may act as a preferential pathway for soil vapor migration.
- A narrow pilot hole will be advanced at desired pre-marked location. In sandy soils, occasionally the pilot hole will collapse after the drill or tile probe is removed. Adding de-ionized water to the sandy soil will temporarily compact the soil and keep the hole open for module insertion.
- Wearing clean surgical gloves, module will be removed from the numbered container and the jar will be re-sealed (this numbered container should correspond to the numbered module ID tag).
- The module will be attached to the cord and cork by passing the looped cord through the loop on the module and pull the cord/cork back through itself.
- Insertion rod will be placed into the pre-cut pocket at the base of the module and lowered into the hole. If resistance is encountered, the module will be removed and the hole will be reamed, the module will be re-inserted.

- Once deployed to the desired depth, the insertion rod will be pressed against the side of the hole and slightly twisted to release the module. The rod will be removed and any excess cord will be pushed into the pilot hole and plugged with the cork.
- The module number will be indicated along with date and time of installation and any pertinent comments on the installation/retrieval log. The module serial number will be written on the site map adjacent to the appropriate map location.
- The tile probe or drill bit and the insertion rod will be cleaned prior to use at the next location.

### **3.4 Module Retrieval**

- Following the module exposure period (usually 10-14 days), each module location in the field will be identified using the site map.
- The cork will be removed with a penknife or corkscrew. The cord will be grasped, the module pulled from the ground; and the module ID number will be verified. The cork and cord will be cut-off and discarded. The entire module will be placed in its labeled container and tightly secure the lid.
- Care will be taken that the seal is tight and that no part of module or any dirt/debris is pinched in the jar threads. Over-tightening may cause breakage.
- The module retrieval date/time on the installation/retrieval log will be completed.
- Styrofoam "peanuts" will not be used as packing material. Bubble packing is acceptable. Water ice can be added if desired, but cooling in general is not necessary. If shipping with ice, please take precautions to keep boxes dry (perhaps shipping in a cooler).

## **4.0 SAMPLE LABELING**

Sample containers will be labeled before or immediately after sampling with self-adhesive tags with the information written in waterproof ink:

- Company name
- Project name
- Project number
- Sample I.D. number
- Date and time sample was collected
- Initials of sample collector

## **5.0 FIELD QUALITY CONTROL SAMPLES**

In order to evaluate the precision and accuracy of analytical data, quality control samples will be prepared as described below. These samples will be collected, or prepared and analyzed by the laboratory, as specified in the following sections.



### **5.1 Trip Blanks for Off-Site Shipments**

If VOC samples are shipped offsite for analysis, a minimum of one trip blank per day will be collected and analyzed for the target compound(s). Trip blanks, consisting of laboratory grade ultra pure air will be prepared to evaluate sample cross-contamination during shipment.

### **5.2 Duplicates**

At least one duplicate sample per laboratory per day will be collected from areas of concern.

### **5.3 Method Blank**

During sampling activities using reused/recycled sampling containers (e.g., glass syringes), at a minimum of one decontaminated sample container per 20 samples, or per every 12 hours, whichever is more often, should be used as a method blank to verify and evaluate the effectiveness of decontamination procedures and to detect any possible interference from ambient air.

## **6.0 HANDLING, STORAGE, AND TRANSPORTATION**

Exposure to light and changes in temperature or pressure will accelerate sample degradation. To protect sample integrity the following steps will be undertaken:

- Soil gas samples will not be chilled.
- If condensation is observed in the sample container, the sample will be discarded and a new sample will be collected.
- Soil gas samples will be analyzed within 30 minutes of collection by an on-site mobile laboratory.
- Soil gas samples collected in Summa™ canisters will be analyzed within 72 hours after collection.

## **7.0 DOCUMENTATION**

### **7.1 Field Data Sheets**

A FIELD INVESTIGATION DAILY LOG will be completed for each day of field work. Information recorded on the FIELD INVESTIGATION DAILY LOG will include a description of any deviation from the SAP that were necessitated by field conditions, such as equipment failure, wells that could not be sampled, etc. A SAMPLING LOG form will be used at each well/probe to record the information collected during soil gas sampling. Sample numbers may also be recorded on the FIELD INVESTIGATION DAILY LOG as a means of identifying and tracking the samples. Following review by the project manager, the original records will be kept in the project file. Photographs may also be included in the project file, as appropriate.

## 7.2 Chain-of-Custody Procedures

After samples have been collected and labeled they will be maintained under chain-of-custody procedures. These procedures document the transfer of custody of samples from the field to the laboratory. Each sample sent to the laboratory for analysis will be recorded on a CHAIN-OF-CUSTODY, which will include instructions to the laboratory for analytical services and special turn-a-round times.

Information contained on the triplicate CHAIN-OF-CUSTODY RECORD will include:

- Project name
- Project number
- Signature of sampler(s)
- Date and time sampled
- Sample I.D.
- Number of sample containers
- Sample matrix (water)
- Analyses required
- Remarks, including preservatives, special conditions, or specific quality control measures
- Turnaround time and person to receive laboratory report
- Release signature of sampler(s), and signatures of all people assuming custody
- Condition of samples, including temperature, when received by laboratory

Blank spaces on the CHAIN-OF-CUSTODY will be crossed out and initialed by the sampler between the last sample listed and the signatures at the bottom of the sheet.

The field sampler will sign the CHAIN-OF-CUSTODY and will record the time and date at the time of transfer to the laboratory or to an intermediate person. A set of signatures is required for each relinquished/reserved transfer, including internal transfer. The original imprint of the chain-of-custody record will accompany the sample containers. A duplicate copy will be placed in the project file.

If the samples are to be shipped to the laboratory, the original CHAIN-OF-CUSTODY will be sealed inside a plastic bag within the ice chest, and the chest will be sealed with custody tape that has been signed and dated by the last person listed on the chain-of-custody. U.S. Department of Transportation shipping requirements will be followed and the sample shipping receipt will be retained in the project files as part of the permanent chain-of-custody document. The shipping company (e.g., Federal Express, UPS) will not sign the chain-of-custody forms as a receiver; instead the laboratory will sign as a receiver when the samples are received.

Forms Used: Daily Field Record  
Chain-of-Custody Form

# FIELD INVESTIGATION DAILY LOG

PROJECT LOCATION: \_\_\_\_\_ DATE: \_\_\_\_\_

VISITORS/SUBCONTRACTORS: \_\_\_\_\_

[illegible]

Reviewed By (name/signature): \_\_\_\_\_ Date: \_\_\_\_\_

